

# FIFTEENTH CATALOGUE

~ OF THE ~

## ARKANSAS

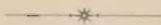
# INDUSTRIAL UNIVERSITY

FAYETTEVILLE, WASHINGTON COUNTY, ARK.,

FOR THE YEAR ENDING JUNE 9, 1887,

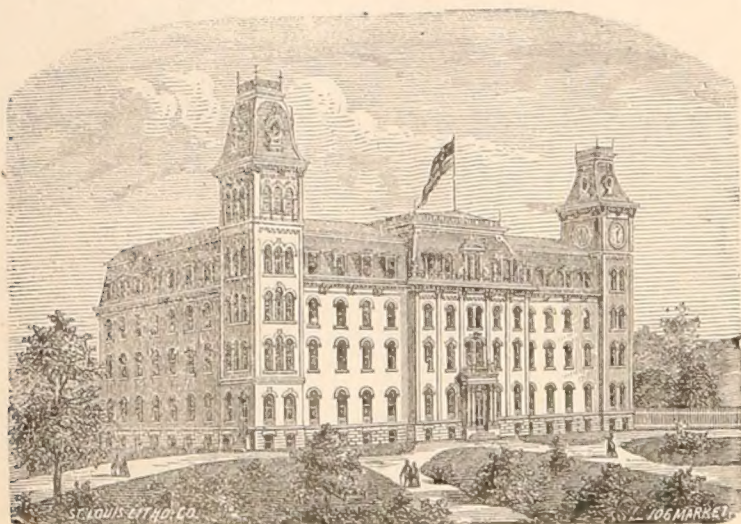
~ AND ~

ANNOUNCEMENT FOR 1887-88.



# ARKANSAS INDUSTRIAL UNIVERSITY.

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## DIMENSIONS AND CAPACITY.

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It is 214 feet long by 122 feet wide, covering an area of 26,108 square feet. It is five stories high, with French or Mansard roof, covered with slate or tin. The height of the building is 134 feet.

The basement story is built of stone; the foundation is bedded with solid rock. The next three stories are built of brick, and the attic of wood. The basement story is in height 13 feet in the clear; first and second stories 16 feet each; third and fourth, 12 feet; the clock and bell towers extending two stories above attic.

There are ten rooms 77 by 61 feet, ten rooms 22 by 29 feet, ten rooms 22 by 28 feet, ten rooms 22 by 25 feet, ten rooms 22 by 22 feet, ten rooms 22 by 19 feet, five rooms 15 by 28 feet, four rooms 22 by 20 feet, and one room 74 by 50 feet—making a total of seventy rooms. In addition, there are four corridors 15 by 28 feet and four corridors 14 by 210 feet.

# BOARD OF TRUSTEES.

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EX-OFFICIO PRESIDENT OF THE BOARD,

*His Excellency, SIMON P. HUGHES, Governor, Little Rock, Ark.*

SECRETARY AND TREASURER,

J. L. CRAVENS, *Fayetteville, Ark.*

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## TRUSTEES.

|                              |                   |
|------------------------------|-------------------|
| HON. W. F. AVERA.....        | Camden, Ark       |
| HON. W. M. FISHBACK.....     | Fort Smith, Ark   |
| HON. J. W. KEESEE.....       | Latour, Ark       |
| HON. JAS. MITCHELL.....      | Little Rock, Ark  |
| HON. W. B. WELCH, M. D.....  | Fayetteville, Ark |
| HON. C. M. TAYLOR, M. D..... | South Bend, Ark   |

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### EXECUTIVE COMMITTEE:

|                        |                |              |
|------------------------|----------------|--------------|
| GOVERNOR S. P. HUGHES, | W. B. WELCH,   | J. W. KEESEE |
|                        | JAS. MITCHELL. |              |

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### FINANCE COMMITTEE:

W. M. FISHBACK AND W. F. AVERA.

---

### BRANCH NORMAL:

|                        |               |               |
|------------------------|---------------|---------------|
| GOVERNOR S. P. HUGHES, | C. M. TAYLOR, | W. F. AVERA • |
|------------------------|---------------|---------------|

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### AGRICULTURAL COMMITTEE:

|               |                 |              |
|---------------|-----------------|--------------|
| J. W. KEESEE, | W. M. FISHBACK, | W. F. AVERA. |
|---------------|-----------------|--------------|

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### MECHANICAL COMMITTEE:

|              |                |                |
|--------------|----------------|----------------|
| W. B. WELCH, | JAS. MITCHELL, | C. M. TAYLOR • |
|--------------|----------------|----------------|

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### COMMITTEE ON RULES AND BY-LAWS:

|               |                 |              |
|---------------|-----------------|--------------|
| J. W. KEESEE, | W. M. FISHBACK, | W. B. WELCH. |
|---------------|-----------------|--------------|

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### PRINTING COMMITTEE:

|              |                 |
|--------------|-----------------|
| W. F. AVERA, | W. M. FISHBACK. |
|--------------|-----------------|

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## BOARD OF TRUSTEES, MEDICAL DEPARTMENT.

---

J. A. DIBRELL, JR., M. D.,

Little Rock.

WILLIAM M. LAWRENCE, M. D.,

Batesville.

WILLIAM THOMPSON, M. D.,

Little Rock.



# OFFICERS AND INSTRUCTORS.

---

\* .....  
*President, Professor of Mental Philosophy and Ancient Languages.* ✓

---

J. M. WHITHAM, A. M., (Late Assistant Engineer U. S. Navy),  
*Superintendent Mechanic Arts and Professor of Engineering.*

---

GEO. D. PURINTON, A. M.,  
*Superintendent Agriculture and Professor Chemistry and Mineralogy.* ✓

---

E. H. MURFEE, A. M., LL. D.,  
*Professor of Mathematics, Logic and Astronomy.*

---

HOWARD EDWARDS, A. M.,  
*Professor of English, History and Modern Languages.* ✓

---

F. W. SIMONDS, Ph. D.,  
*Professor of Biology, Geology and Physics.* ✓

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\* .....  
*Instructor in Tactics and Commandant of Cadets.* ✓ *by U.S.A*

---

J. F. HOWELL, A. M.,  
*Instructor in Pedagogics and Senior Assistant.* ✓

---

R. H. WILLIS, A. M.,  
*Adjunct Professor of Ancient Languages.* ✓

---

W. E. ANDERSON,  
(Grad. Miller M. L. School and late Engineer Student Univ. of Va.),  
*Adjunct Professor of Mechanic Arts and Instructor in Mechanical Drawing.*

\* To be filled.

# OFFICERS AND INSTRUCTORS.

*Adjunct Professor of Chemistry and Agriculture.*

G. W. DROKE, A. M.,  
*Assistant in Preparatory Department.*

MISS ANNIE WAGGENER,  
*Assistant in Preparatory Department.*

*Assistant to be Elected.*

*Assistant to be Elected.*

MISS KATIE V. KING,  
*Instructor in Music.*

MISS LIBBIE M. HALL, B. P.,  
*Instructor in Ladies' Industrial Art.*

J. W. MAYO, (Grad. Miller M. L. School of Va.),  
*Instructor in Iron Work.*

*Instructor in Wood Work.*

LEWIS C. GARDNER, (Grad. Chicago Man. Training School),  
*Instructor in Foundry and Forging.*

*Foreman of Farm.*

LEE TREADWELL,  
*Instructor in Field Engineering.*

WM. FRENCH,  
*Janitor and Engineer.*

\* To be filled.

# MEDICAL DEPARTMENT.

SESSION OF 1887-8.

LOCATED AT LITTLE ROCK, ARKANSAS.

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## PROFESSORS.

P. O. HOOPER, M. D.,  
*Emeritus, Practice of Medicine.*

EDWIN BENTLEY, M. D.,  
*Institutes and Practice of Surgery.*

JAS. A. DIBRELL, JR., M. D.,  
*General, Descriptive and Surgical Anatomy, and President of Faculty.*

A. L. BREYSACHER, M. D.,  
*Obstetrics and Diseases of Women and Children.*

JOHN J. McALMONT, M. D.,  
*Materia Medica, Therapeutics, Hygiene and Botany.*

JAMES H. SOUTHALL, M. D.,  
*Practice of Medicine.*

ROSCOE G. JENNINGS, M. D.,  
*Clinical Surgery and Dermatology.*

W. G. MILLER, M. D.,  
*Medical Chemistry and Toxicology.*

L. P. GIBSON, M. D.,  
*Demonstrator of Anatomy.*

T. E. MURRELL, M. D.,  
*Ophthalmology and Otology.*

JAMES H. LENOW, M. D.,  
*Diseases of Genito-Urinary Organs.*

CLAIBORNE WATKINS, M. D.,  
*Physical Diagnosis and Clinical Medicine.*

LOUIS R. STARK, M. D.,  
*Gynecology.*

JOHN WATERS, M. D.,  
*Institutes of Medicine.*

F. L. FRENCH, M. D.,  
*Prosector of Anatomy.*

W. U. SIMONS, U. S. SIGNAL SERVICE,  
*Meteorology, Etc.*

J. N. Craig, Janitor, at the College, on Second, between Main and Louisiana Sts.  
All communications should be addressed to

R. G. JENNINGS, M. D., Secretary of Faculty, Little Rock, Ark.



A 514

# CATALOGUE OF STUDENTS.

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SESSION 1886-7.

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## COLLEGIATE DEPARTMENT.

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### JUNIOR CLASS.

|                              |  |
|------------------------------|--|
| Bowles, Preston.....         | Hancock, Washington County, Md.        |
| Crozier, W. N.....           | Fayetteville, Washington County, Ark.  |
| Danaher, M.....              | Little Rock, Pulaski County, Ark.      |
| Dickson, W. E.....           | Magnolia, Columbia County, Ark.        |
| Drake, N. F.....             | Cincinnati, Washington County, Ark.    |
| Hall, H. J.....              | Fayetteville, Washington County, Ark.  |
| Hobbs, J. H.....             | Bentonville, Benton County, Ark.       |
| Pace, Ida.....               | Fayetteville, Washington County, Ark.  |
| Powell, W. W.....            | Melbourne, Izard County, Ark.          |
| Schoff, G. C.....            | Annapolis, Maryland.                   |
| Treadwell, Lee.....          | Toledo, Cleveland County, Ark.         |
| Warren, G. A.....            | Hazel Grove, Independence County, Ark. |
| Flynn W. N. (Irreg.).....    | Fayetteville, Washington County, Ark.  |
| Obenshain, Ora (Irreg.)..... | Fayetteville, Washington County, Ark.  |
| Polson, Alice (Irreg.).....  | Southwest City, McDonald County, Mo.   |
| Total.....                   | 15.                                    |

### SOPHOMORE CLASS.

|                        |                                       |
|------------------------|---------------------------------------|
| Aiken, D. C. B.....    | Fayetteville, Washington County, Ark. |
| Downs, S. A.....       | Nashville, Howard County, Ark.        |
| Edgar, Gertrude D..... | Fayetteville, Washington County, Ark. |
| Fishback, L. F.....    | Fort Smith, Sebastian County, Ark.    |
| Ganaway, J. R.....     | Warren, Bradley County, Ark.          |
| Humphreys, G. A.....   | Fort Smith, Sebastian County, Ark.    |
| Harrison, Grace.....   | Washington, D. C.                     |

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|                        |   |
|------------------------|---|
| McNeely, J. C.....     | Little Rock, Pulaski County, Ark.       |
| Morrison, M. D.....    | Osage Mills, Benton County, Ark.        |
| Slagle, Ida.....       | Siloam, Benton County, Ark.             |
| Southerland, J. W..... | Hindsville, Madison County, Ark.        |
| Taff, A. G. ....       | Waldron, Scott County, Ark.             |
| Taff, Mollie.....      | Waldron, Scott County, Ark.             |
| Taff, J. A.....        | Waldron, Scott County, Ark.             |
| Taff, J. H.....        | Waldron, Scott County, Ark.             |
| Tillman, Annie.....    | Fayetteville, Washington County, Ark.   |
| Wade, J. M.....        | Blanchard's Springs, Union County, Ark. |
| Wheeler, J. N.....     | Warren, Bradley County, Ark.            |
| Williams, H. E.....    | Fayetteville, Washington County, Ark.   |
| Total.....             | 19.                                     |

### FRESHMAN CLASS.

|                        |                                       |
|------------------------|---------------------------------------|
| Arbuckle, J. D.....    | Charleston, Franklin County, Ark.     |
| Abernathy, Hettie..... | Warren, Bradley County, Ark.          |
| Bates, W. R.....       | Cincinnati, Washington County, Ark.   |
| Brown, A. S.....       | Charleston, Franklin County, Ark.     |
| Brown, Jno.....        | Belmont, Crawford County, Ark.        |
| Bruce, T. V. ....      | Fort Smith, Sebastian County, Ark.    |
| Blanks, W. L.....      | Hamburg, Ashley County, Ark.          |
| Dowdle, T. A.....      | Morrilton, Conway County, Ark.        |
| Edgar, Bessie.....     | Fayetteville, Washington County, Ark. |
| Fakes, W. B.....       | Riverside, Woodruff County, Ark.      |
| Falconer, W. A.....    | Charleston, Franklin County, Ark.     |
| Gunter, W. T.....      | Fayetteville, Washington County, Ark. |
| Haney, W. W.....       | Bentonville, Benton County, Ark.      |
| Harris, R. D.....      | Melbourne, Izard County, Ark.         |
| Hervey, W. R.....      | Morrilton, Conway County, Ark.        |
| Huckleberry, J. H..... | Van Buren, Crawford County, Ark.      |
| Irvin, R. W.....       | Fayetteville, Washington County, Ark. |
| Kemp, Elzie.....       | Fayetteville, Washington County, Ark. |
| Kinsworthy, J. H.....  | Mineral Springs, Howard County, Ark.  |
| Magness, J. W.....     | Fayetteville, Washington County, Ark. |
| Martin, Mack.....      | Hackett City, Sebastian County, Ark.  |
| Millsaps, N.....       | Fayetteville, Washington County, Ark. |
| Morrow, Mattie.....    | Fayetteville, Washington County, Ark. |
| Murphy, A. J.....      | Hot Springs, Garland County, Ark.     |
| Pace, Frank.....       | Fayetteville, Washington County, Ark. |
| Park, P. J.....        | Cabot, Lonoke County, Ark.            |
| Patton, W. J.....      | Little Rock, Pulaski County, Ark.     |
| Pearce, L.....         | Magnolia, Columbia County, Ark.       |
| Pittman, Jennie.....   | Fayetteville, Washington County, Ark. |



|                        |  |
|------------------------|--|
| Reynolds, Mattie.....  | Fayetteville, Washington County, Ark.  |
| Robertson, F. O.....   | Monticello, Drew County, Ark.          |
| Routh, Louella.....    | Boonsboro', Washington County, Ark.    |
| Seaborn, J. M.....     | Forrest City, St. Francis County, Ark. |
| Shreve, A. W.....      | Farmington, Washington County, Ark.    |
| Shreve, H. B.....      | Farmington, Washington County, Ark.    |
| Southerland, H. R..... | Hindsville, Madison County, Ark.       |
| Stuart, W. S.....      | Columbus, Hempstead County, Ark.       |
| Turner, F. P.....      | Charleston, Franklin County, Ark.      |
| Vaughan, Cordie.....   | Fayetteville, Washington County, Ark.  |
| Walker, Nannie.....    | Fayetteville, Washington County, Ark.  |
| Webb, Abner.....       | New Edinburg, Cleveland County, Ark.   |
| Whitmore, J. T.....    | Center Point, Howard County, Ark.      |
| Young, C. I.....       | Fayetteville, Washington County, Ark.  |
| Total.....             | 43.                                    |

## PREPARATORY DEPARTMENT.

### SUB-FRESHMAN CLASS.

|                          |                                       |
|--------------------------|---------------------------------------|
| Adams, O. C.....         | Alma, Crawford County, Ark.           |
| Baum, Nettie.....        | Fayetteville, Washington County, Ark. |
| Bellchambers, Annie..... | Eureka Springs, Carroll County, Ark.  |
| Bond, Board.....         | Newport, Jackson County, Ark.         |
| Bray, W. O.....          | Fayetteville, Washington County, Ark. |
| Brewer, C. W.....        | Center Ridge, Conway County, Ark.     |
| Bronaugh, Jerry.....     | DeVall's Bluff, Pulaski County, Ark.  |
| Bush, C. F.....          | Van Buren, Crawford County, Ark.      |
| Cassaday, H. V.....      | Fayetteville, Washington County, Ark. |
| Comstock, R.....         | Uniontown, Crawford County, Ark.      |
| Curry, Jennie.....       | Fayetteville, Washington County, Ark. |
| Curry, Lula.....         | Fayetteville, Washington County, Ark. |
| Curry, May.....          | Fayetteville, Washington County, Ark. |
| Doak, J. A.....          | Boonsboro', Washington County, Ark.   |
| Drake, C. H.....         | Fayetteville, Washington County, Ark. |
| Duke, Annie.....         | Fayetteville, Washington County, Ark. |
| Field, S. L.....         | Eureka Springs, Crawford County, Ark. |
| Fike, W. T.....          | Lanark, Bradley County, Ark.          |
| Galloway, Irene.....     | Fayetteville, Washington County, Ark. |
| Galloway, D. F.....      | Jacksonville, Pulaski County, Ark.    |
| Goode, W. C.....         | Magnolia, Columbia County, Ark.       |

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|                       |                                       |
|-----------------------|---------------------------------------|
| Greene, F. W.....     | Fayetteville, Washington County, Ark. |
| Gregg, H. L.....      | Fayetteville, Washington County, Ark. |
| Hamilton, W. J.....   | Hartford, Sebastian County, Ark.      |
| Harrison, L. J.....   | Fayetteville, Washington County, Ark. |
| Healy, Dan.....       | Fayetteville, Washington County, Ark. |
| Henderson, F. K.....  | Fayetteville, Washington County, Ark. |
| Hensley, W. B.....    | Ozark, Franklin County, Ark.          |
| Horton, S. A.....     | Fairview, Dallas County, Ark.         |
| Jackson, Edna.....    | Fayetteville, Washington County, Ark. |
| Johnson, F.....       | Hot Springs, Garland County, Ark.     |
| Johnson, G. B.....    | St. Louis, Mo.                        |
| Jones, Bertie.....    | Fayetteville, Washington County, Ark. |
| Jones, J. W.....      | Scotland, Van Buren County, Ark.      |
| Kennedy, Alfred.....  | Van Buren, Crawford County, Ark.      |
| Kennedy, Allen.....   | Van Buren, Crawford County, Ark.      |
| Lacotts, J. A.....    | DeWitt, Arkansas County, Ark.         |
| Lee, O. C.....        | Alma, Crawford County, Ark.           |
| Leverett, S.....      | Fayetteville, Washington County, Ark. |
| Lewis, Joe.....       | Boonsboro', Washington County, Ark.   |
| Murphy, E. L.....     | Hot Springs, Garland County, Ark.     |
| Newman, A. J.....     | Lonoke, Lonoke County, Ark.           |
| Oliver, Wallace.....  | Lee's Creek, Crawford County, Ark.    |
| Overstreet, O. E..... | Eureka Springs, Carroll County, Ark.  |
| Pace, Henry.....      | Fayetteville, Washington County, Ark. |
| Parker, E. L.....     | Pine Bluff, Jefferson County, Ark.    |
| Parks, Fannie.....    | Boonsboro', Washington County, Ark.   |
| Quinney, W. R.....    | Lanark, Bradley County, Ark.          |
| Reed, Maud.....       | Fayetteville, Washington County, Ark. |
| Reid, W. A.....       | Morrilton, Conway County, Ark.        |
| Reynolds, Farie.....  | Fayetteville, Washington County, Ark. |
| Ross, J. C.....       | Malvern, Hot Spring County, Ark.      |
| Rutherford, R. L..... | Billingsly, Washington County, Ark.   |
| Saxon, E. F.....      | Lisbon, Union County, Ark.            |
| Sellers, Jordan.....  | Perryville, Perry County, Ark.        |
| Smith, M.....         | El Dorado, Union County, Ark.         |
| Stewart, W.....       | Columbus, Hempstead County, Ark.      |
| Switzer, D. M.....    | Petersburg, Ashley County, Ark.       |
| Treadwell, Evans..... | Toledo, Cleveland County, Ark.        |
| Turner, J. L.....     | Cypert, Phillips County, Ark.         |
| Walker, Lou.....      | Fayetteville, Washington County, Ark. |
| Watson, Fannie.....   | Boonsboro', Washington County, Ark.   |
| Wilson, D. F.....     | Summerville, Calhoun County, Ark.     |
| Wines, Loula.....     | Fayetteville, Washington County, Ark. |
| Wingfield, J. D.....  | Antoine, Pike County, Ark.            |

Total..... 65

## A CLASS.

|                        |   |
|------------------------|---|
| Aiken, Gertie.....     | Fayetteville, Washington County, Ark.   |
| Atkins, Jno. H.....    | Double Wells, Jefferson County, Ark.    |
| Baldrige, J. R.....    | Fayetteville, Washington County, Ark.   |
| Blanton, C. L.....     | Prairie Grove, Washington County, Ark.  |
| Botefuhr, Fannie.....  | Fayetteville, Washington County, Ark.   |
| Byrnes, Dora.....      | Fayetteville, Washington County, Ark.   |
| Campbell, Edgar.....   | Lowell, Benton County, Ark.             |
| Carter, G. W.....      | Carter's Store, Washington County, Ark. |
| Cassaday, G. H.....    | Fayetteville, Washington County, Ark.   |
| Clinkscales, A. A..... | Van Buren, Crawford County, Ark.        |
| Crawford, Della.....   | Fayetteville, Washington County, Ark.   |
| Davies, Elzie.....     | Fayetteville, Washington County, Ark.   |
| Davis, James.....      | Auvergne, Jackson County, Ark.          |
| Deaderick, J. D.....   | Vanndale, Cross County, Ark.            |
| Everett, J. W.....     | Norwoodville, Sevier County, Ark.       |
| Ferguson, A.....       | Fayetteville, Washington County, Ark.   |
| Green, T. C.....       | Barton, Phillips County, Ark.           |
| Gregg, Ida.....        | Fayetteville, Washington County, Ark.   |
| Hansard, C. O.....     | Fayetteville, Washington County, Ark.   |
| Harrison, Minnie.....  | Billingsly, Washington County, Ark.     |
| Hoag, E. C.....        | Carthage, Jasper County, Mo.            |
| Hoil, G. W.....        | Marble, Madison County, Ark.            |
| Hollis, Russell.....   | Orlando, Cleveland County, Ark.         |
| Horton, Maude.....     | Fairview, Dallas County, Ark.           |
| Hunt, Gertie.....      | Fayetteville, Washington County, Ark.   |
| Irvin, R. B.....       | Fayetteville, Washington County, Ark.   |
| Johnson, G. W.....     | Fayetteville, Washington County, Ark.   |
| Leach, D. C.....       | Fayetteville, Washington County, Ark.   |
| Lee, Frank.....        | Fayetteville, Washington County, Ark.   |
| Lee, Lillie.....       | Fayetteville, Washington County, Ark.   |
| Leverett, Ammie.....   | Fayetteville, Washington County, Ark.   |
| Lewis, L. L.....       | Fayetteville, Washington County, Ark.   |
| Logan, E.....          | Walnut Hills, Lafayette County, Ark.    |
| Lippard, J. L.....     | Farmer, Scott County, Ark.              |
| Macon, G. C.....       | Cane Creek, Calhoun County, Ala.        |
| McIlroy, Annie.....    | Fayetteville, Washington County, Ark.   |
| McIlroy, C. D.....     | Fayetteville, Washington County, Ark.   |
| McKibben, F.....       | Van Buren, Crawford County, Ark.        |
| McNeely, T. H.....     | Rackensack, Pulaski County, Ark.        |
| Middleton, Maude.....  | Fayetteville, Washington County, Ark.   |
| Mills, B. L.....       | El Paso, White County, Ark.             |
| Moore, D. W.....       | Fayetteville, Washington County, Ark.   |
| Nunn, J. B.....        | Camden, Ouachita County, Ark.           |



|                         |                                       |
|-------------------------|---------------------------------------|
| O'Bryan, C. W.....      | Hot Springs, Garland County, Ark.     |
| Overstreet, Carrie..... | Eureka Springs, Carroll County, Ark.  |
| Owsley, C. R.....       | Charleston, Franklin County, Ark.     |
| Pollard, Mary.....      | Fayetteville, Washington County, Ark. |
| Pounds, W. M.....       | Jonesboro', Craighead County, Ark.    |
| Probst, C. J.....       | Little Rock, Pulaski County, Ark.     |
| Rankin, Lillie.....     | Russellville, Pope County, Ark.       |
| Rankin, Nannie.....     | Russellville, Pope County, Ark.       |
| Reinhardt, Hattie.....  | Alma, Crawford County, Ark.           |
| Shaver, S. L.....       | Grange, Sharp County, Ark.            |
| Shipley, N. P.....      | Chester, Crawford County, Ark.        |
| Simmons, J. W.....      | Tillar Station, Drew County, Ark.     |
| Smith, S. K.....        | Fayetteville, Washington County, Ark. |
| Stuart, R. B.....       | Columbus, Hempstead County, Ark.      |
| Taff, S. M.....         | Waldron, Scott County, Ark.           |
| Turner, T. L.....       | Ash Flat, Sharp County, Ark.          |
| Vaulx, S. F.....        | Fayetteville, Washington County, Ark. |
| Wade, M. C.....         | Fayetteville, Washington County, Ark. |
| Wade, R. L.....         | Van Buren, Crawford County, Ark.      |
| Walkup, W. H.....       | Clarendon, Monroe County, Ark.        |
| Watson, J. E.....       | Charleston, Franklin County, Ark.     |
| Wills, J. F.....        | Hartford, Sebastian County, Ark.      |
| Winn, C. M.....         | Russellville, Pope County, Ark.       |
| Woodward, B. B.....     | Sub Rosa, Franklin County, Ark.       |
| Total.....              | 67.                                   |

## B CLASS.

|                       |                                       |
|-----------------------|---------------------------------------|
| Baker, Mollie.....    | Mountain View, Stone County, Ark.     |
| Baxter, Bitha.....    | Forks, Cook County, Wyoming Ter.      |
| Boone, D. A.....      | Swagerty, Washington County, Ark.     |
| Buckner, Jennie.....  | Fayetteville, Washington County, Ark. |
| Butt, Ellie.....      | Ft. Smith, Sebastian County, Ark.     |
| Campbell, Effie.....  | Fayetteville, Washington County, Ark. |
| Compton, C. M.....    | Fayetteville, Washington County, Ark. |
| Derby, Earl H.....    | Hot Springs, Garland County, Ark.     |
| Dowell, R. W.....     | Fayetteville, Washington County, Ark. |
| Edgar, Geo. T.....    | Fayetteville, Washington County, Ark. |
| Evans, Ella.....      | Fayetteville, Washington County, Ark. |
| Evins, A. W.....      | Boonsboro', Washington County, Ark.   |
| Faulkner, C. E.....   | Helena, Phillips County, Ark.         |
| Foster, J. W.....     | Hartford, Sebastian County, Ark.      |
| Galloway, Jennie..... | Jacksonville, Pulaski County, Ark.    |
| Galloway, Maggie..... | Jacksonville, Pulaski County, Ark.    |
| Halk, J. W.....       | Cherry Valley, Cross County, Ark.     |

|                      |                                       |
|----------------------|---------------------------------------|
| Harkrider, C. E..... | El Paso, White County, Ark.           |
| Harris, R. C.....    | Fayetteville, Washington County, Ark. |
| Hocott, J. J.....    | Riverside, Woodruff County, Ark.      |
| Holway, Lutie.....   | Fayetteville, Washington County, Ark. |
| Howe, E. J.....      | Black Rock, Lawrence County, Ark.     |
| Howell, Willey.....  | Fayetteville, Washington County, Ark. |
| Hulse, M. L.....     | Fayetteville, Washington County, Ark. |
| Jackman, J. S.....   | New Gascony, Jefferson County, Ark.   |
| Jackson, Hugh.....   | Fayetteville, Washington County, Ark. |
| Jelks, John L.....   | Riverside, Woodruff County, Ark.      |
| Jelks, W. E.....     | Searcy, White County, Ark.            |
| Jennings, J. E.....  | Eureka Springs, Carroll County, Ark.  |
| Johnson, Lydia.....  | Fayetteville, Washington County, Ark. |
| Kellogg, W. S.....   | Little Rock, Pulaski County, Ark.     |
| Long, Annie.....     | Fayetteville, Washington County, Ark. |
| Malone, J. E.....    | Hackett City, Sebastian County, Ark.  |
| McNair, W. D.....    | Pierce City, Lawrence County, Mo.     |
| Murrell, Walter..... | Austin, Lonoke County, Ark.           |
| Oettinger, Joe.....  | Malvern, Hot Spring County, Ark.      |
| Pounds, W. A.....    | Jonesboro', Craighead County, Ark.    |
| Rankin, Fannie.....  | Russellville, Pope County, Ark.       |
| Rhea, Sallie.....    | Rhea's Mills, Washington County, Ark. |
| Shoffner, C. L.....  | Auvergne, Jackson County, Ark.        |
| Shreve, H. W.....    | Farmington, Washington County, Ark.   |
| Simmons, Ella.....   | Fayetteville, Washington County, Ark. |
| Smith, F. G.....     | Marion, Crittenden County, Ark.       |
| Smith, W. S.....     | Marion, Crittenden County, Ark.       |
| Speir, T. U.....     | Uniontown, Crawford County, Ark.      |
| Wade, Eddie.....     | Fayetteville, Washington County, Ark. |
| Walters, D. B.....   | Scottsville, Pope County, Ark.        |
| Ward, W. J.....      | Fayetteville, Washington County, Ark. |
| Warren, J. T.....    | El Paso, White County, Ark.           |
| West, J. B.....      | Boonsboro', Washington County, Ark.   |
| White, Lula.....     | Fayetteville, Washington County, Ark. |
| Wilkins, J. L.....   | Helena, Phillips County, Ark.         |
| Wilson, Lizzie.....  | Fayetteville, Washington County, Ark. |
| Yarbrough, W. P..... | Augusta, Woodruff County, Ark.        |
| Total.....           | 54                                    |

## C CLASS.

|                     |                                       |
|---------------------|---------------------------------------|
| Baylor, Della.....  | Fayetteville, Washington County, Ark. |
| Booker, W. B.....   | Columbus, Hempstead County, Ark.      |
| Culver, Nannie..... | Fayetteville, Washington County, Ark. |
| Davis, Isidore..... | Hot Springs, Garland County, Ark.     |

|                           |                                       |
|---------------------------|---------------------------------------|
| Deaderick, I. N . . . . . | Vanndale, Cross County, Ark.          |
| Dent, H. G. . . . .       | Imboden, Lawrence County, Ark.        |
| Dodds, J. B. . . . .      | Pine Bluff, Jefferson County, Ark.    |
| Douglass, W. W. . . . .   | Fayetteville, Washington County, Ark. |
| Fisher, Gertie. . . . .   | Fayetteville, Washington County, Ark. |
| Gleghorn, W. A. . . . .   | Riverside, Woodruff County, Ark.      |
| Graves, A. W. . . . .     | Lexa, Phillips County, Ark.           |
| Hammack, A. . . . .       | Van Buren, Crawford County, Ark.      |
| Hess, G. R. . . . .       | Mountian View, Stone County, Ark.     |
| Hoge, H. M . . . . .      | Fayetteville, Washington County, Ark. |
| Hooper, G. N. . . . .     | Little Rock, Pulaski County, Ark.     |
| Huston, C. E. . . . .     | Walnut Ridge, Lawrence County, Ark.   |
| Katz, Leon. . . . .       | Casco, Arkansas County, Ark.          |
| Killough, Wesley. . . . . | Vanndale, Cross County, Ark.          |
| Kinman, T. D. . . . .     | Newport, Jackson County, Ark.         |
| Ladd, J. F. . . . .       | Wheeler, Washington County, Ark.      |
| Lee, Eva. . . . .         | Fayetteville, Washington County, Ark. |
| Macon, J. W. . . . .      | Hayes' Store, Madison County, Ala.    |
| Montgomery, J. J. . . . . | Spadra, Johnson County, Ark.          |
| Phillips, W. H. . . . .   | Ash Flat, Sharp County, Ark.          |
| Turner, J. H. . . . .     | Ash Flat, Sharp County, Ark.          |
| Wolf, Cyrus. . . . .      | Little Rock, Pulaski County, Ark.     |
| Total . . . . .           | 26.                                   |

## IRREGULAR.

|                         |                                       |
|-------------------------|---------------------------------------|
| Harrison, J. C. . . . . | Fayetteville, Washington County, Ark. |
|-------------------------|---------------------------------------|



## RECAPITULATION.

|   | MALES. | FEMALES. | TOTAL. |
|---|--------|----------|--------|
| Junior Class.....   | 13     | 2        | 15     |
| Sophomore Class.....  | 14     | 5        | 19     |
| Freshman Class.....   | 34     | 9        | 43     |
|   | —      | —        | —      |
| Total.....  | 61     | 16       | 77     |
| Sub-Freshman Class.....   | 49     | 16       | 65     |
| A Class.....  | 49     | 18       | 67     |
| B Class.....  | 37     | 17       | 54     |
| C Class.....  | 22     | 4        | 26     |
| Irregular.....  | 1      | —        | 1      |
|   | —      | —        | —      |
| Total.....  | 219    | 71       | 290    |
| Matriculates that were not admitted into the classes<br>they applied for and returned home..... |        |          | 11     |
| Total number of matriculates.....   |        |          | —301   |
| Students in Instrumental Music.....   |        |          | 36     |
| Students in Vocal Music.....  |        |          | 14     |
| Students in Art.....  |        |          | 280    |
| Total.....  |        |          | —621   |
| Deduct names repeated in Music and Art.....   |        |          | 294    |
| Total in Departments at Fayetteville.....   |        |          | —327   |
| Medical Department at Little Rock.....  |        |          | 61     |
| Branch Normal at Pine Bluff.....  |        |          | 215    |
| Grand total.....  |        |          | —603   |

## GENERAL INFORMATION.

The aims of the University are set forth in the following sections of the Acts of Congress and of the General Assembly of Arkansas, under which it was established :

The Act of Congress of 1862, appropriating lands to establish colleges in the States, provides that all moneys derived from their sale "shall be inviolably appropriated by each State which may take and claim the benefit of this act, to the endowment, support and maintenance of at least one college, where the leading objects shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts in such manner as the Legislatures of the States may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."

(U. S. Statutes, Vol. 61, Stat. 7, Sec. 4).

Our own General Assembly, in accepting the original grant and in creating the University, provides that the fund realized therefrom, "shall be forever devoted and applied to the endowment and maintenance, under such laws or articles of incorporation as may be by the General Assembly hereafter provided, of an institution of learning to be styled 'The Arkansas Industrial University,' wherein shall be taught, in addition to the usual course of study prescribed in universities, the science and practice of Agriculture, the Mechanic Arts, Engineering and Military Science and Tactics." (Act of July 23, 1868.)

In order further to emphasize the Agricultural and Mechanical Departments, the late Legislature, in what is known as the Barker Bill, while making a handsome appropriation to each of

these leading Departments, ordained that all male beneficiaries should pursue one of these courses; restricted the subjects to be taught to beneficiaries; and fixed the number and character of the professorships. The evident design of the Legislature was to respond to the demands and needs of the State, by creating an Agricultural and Mechanical Institution, with such subsidiary courses as the amount of the appropriation would allow. The present Board of Trustees and Faculty of the Institution, aware of the necessities of the State and fully in accord with the policy outlined by the Legislature, have done all in their power, in laying out the appropriation and drawing up the courses of study, to meet the wants, both of the great mass of the State, as well as of the minority also in a subsidiary way. We are fully persuaded that the Agricultural and Mechanical courses here offered and the facilities afforded by the Legislative appropriations will enable us to turn out graduates in these Departments that will compare favorably with those of any other school, while at the same time, with little or no additional cost to the State, strong Classical and Normal courses have been laid down. We engage to turn out B. A. and L. I. graduates, strong, healthy, vigorous, and at the same time furnished with far more than the average knowledge, training and experience found in graduates of this character from other schools.

#### The Courses offered are the following:

|  |  |    |
|--|--|----|
| 1. Agricultural, leading to the Degree of B. S.              | See Schedule p. 21 Detailed Statement, | 42 |
| 2. General Science, leading to the Degree of B. S.           | " " " 22 " " "                         | 46 |
| 3. Short Agricultural, ending with Soph. year                | " " " 23 " " "                         | 42 |
| 4. Mechanical Engineering, leading to the Degree of B. M. E. | " " " 24 " " "                         | 59 |
| 5. Civil Engineering, leading to the Degree of B. C. E.      | " " " 25 " " "                         | 60 |
| 6. Mechanic Arts, ending with the Soph. year                 | " " " 26 " " "                         | 48 |
| 7. Young Ladies' Course, Degree B. S. or B. Let.             | " " " 27 " " "                         | 19 |
| 8. Classical Course, leading to the Degree of B. A.          | " " " 28 " " "                         | 18 |
| 9. Normal Course, leading to the Degree of L. I.             | " " " 29 " " "                         | 74 |

Courses 1, 2, 3, 4, 5, 6, 7 are free to all Beneficiaries, but if any language other than English is taken, the regular tuition fee will be exacted.



Courses 8 and 9 can be taken only by the payment of the regular tuition fee of ten dollars per year.

All Courses *for male students* are required to include practical work at from three cents to five cents per hour. The hours of the day are, therefore, divided into two parts; the morning hours are devoted to recitations in the various courses; three hours of the afternoon are devoted to the various kinds of practical work. The schedule of courses from p. 21 to p. 29 includes only the five periods into which the hours from 9 a. m. to 12:20 p. m. are divided. For afternoon work all male students are referred to p. 30 and following, where the full schedule of afternoon work is given.

Arrangements have been made so that a student in any course *may*, by application to the Faculty and at the discretion of that body, take, as a fifth study, French in the Freshman and Sophomore years, and German in the Junior and Senior years; and where possible, as stated in schedule, p. 21 to p. 29, the student has been allowed to use his own discretion in choosing the language indicated or the study with which it is made elective; but in all cases, Beneficiaries, when they take any language other than English, must pay the regular tuition fee of ten dollars per year.

The Classical course is intended to meet the wants of those who, while strong and steady enough to do the practical work required, have the energy and will-power to do the mental work of a B. A. course, and obtain that degree as a basis for professional life, or for mental training; of those who have State pride enough not to want to go outside of the State to obtain that training which the State *ought to, can, and does* afford its sons. The very best material of the State, thus dissociated from all its interests and belongings during the whole period of training, is either permanently lost to the State, or comes back to work at an immense disadvantage for want of knowledge of those of whom under other circumstances there would have existed the truest of all knowledge, the intimate

association of school life. We call upon the patriotism of the State to stop this annual emigration, and are glad to be able, on our own part, to offer a B. A. course equal to that of any other institution.

The Young Ladies' course is a necessity, since the Barker Bill still admits ladies as beneficiaries, yet does not require any work of them. At the same time, they could not take the specific text-book work required in the first seven courses. The course is so arranged that by taking the science work as laid down, the lady beneficiaries do not pay tuition, and obtain the degree of B. S. By paying tuition and substituting a language for some of the sciences as indicated by the necessities of the schedule, they can obtain the degree of B. Let.; or they can take the regular B. A. course. *The manual work required of young ladies by the Board is only such as they did last year under Miss Hall.*

By a resolution of the Board of Trustees, every parent or guardian is required to choose for his son or ward, if a minor, either the Mechanical or Agricultural course of labor, and to make a written communication to the President at the entrance of the student stating the choice made.

## CONDITIONS FOR ADMISSION TO FRESHMAN CLASS.

All new students seeking to enter the Freshman Class will be examined in Geography, U. S. History, English Grammar (Analysis and Composition), Arithmetic, Algebra (to Quadratic Equations), Geometry (three books) and Latin, if the course of study embraces Latin.

Candidates for higher classes, or for the Freshman Class after beginning of session, will be examined also in the subjects passed over by the class.

### PREPARATORY DEPARTMENT.

The A Class and the Sub-Freshman Class constitute the Preparatory Department, and, as will be seen by reference to the schedule, p. 21 to p. 29, are substantially the same for all courses. The B Class will consist of those that fall below the requirements for the A Class in any study, and it will be used to coach up students so failing. The student will remain in it only so long as is necessary to prepare him for the upper Class. In order that this coaching work may the more readily and rapidly be done, the Board of Trustees, not regarding the students of this Class as regular members of the University, have remitted the labor required in their case.\*



*Agricultural Course for Bachelor of Scientific Agriculture (B. S. A.)*

| CLASSES.         | HOURS. | FIRST TERM.                                | SECOND TERM.  | THIRD TERM.                             |
|------------------|--------|--|---|---|
| A CLASS.         | 1      | English Grammar.....                       | English Grammar.....                                  | English Grammar.....                    |
|                  | 2      | Arithmetic.....                            | Arithmetic.....                                       | Arithmetic.....                         |
|                  | 3      | Geography.....                             | United States History.....                            | United States History.....              |
|                  | 4      | Reading and Spelling.....                  | Reading and Spelling.....                             | Reading and Spelling.....               |
| SOPHOMORE CLASS. | 1      | .....                                      | .....   | Book-Keeping.....                       |
|                  | 2      | Elementary Chemistry (3)<br>(Elocution (2) | Elementary Physiol. (3)<br>(Elocution (2)             | .....                                   |
|                  | 3      | Geometry.....                              | Algebra.....  | Algebra.....                            |
|                  | 4      | Physical Geography.....                    | Phys. Geog. and Bk-Kpg.                               | Elementary Botany (3)<br>(Elocution (2) |
|                  | 5      | English.....                               | English.....  | English.....                            |
| FRESHMAN CLASS.  | 1      | Algebra.....                               | Algebra and Geometry.....                             | Geometry.....                           |
|                  | 2      | English.....                               | English.....  | English.....                            |
|                  | 3      | Physiology.....                            | .....   | .....                                   |
|                  | 4      | Physics.....                               | Physics.....  | Science of Agriculture.....             |
|                  | 5      | .....                                      | Zoology.....  | Botany.....                             |
|                  |        | (Elocution one rec. per wk.)               | (Elocution one rec. per wk.)                          | (Elocution one rec. per wk.)            |
| SOPHOMORE CLASS. | 1      | General History.....                       | General History.....                                  | General History.....                    |
|                  | 2      | Struct'l and Micros. Botany                | Biology and Entomology.....                           | Feeding and Dairy Husbandry             |
|                  | 3      | General Chemistry.....                     | General Chemistry.....                                | General Chemistry.....                  |
|                  | 5      | Geometry.....                              | Plane Trigonometry.....                               | Spherical Trigonometry.....             |
|                  |        | (Elocution one rec. per wk.)               | .....   | (Elocution one rec. per wk.)            |
| JUNIOR CLASS.    | 1      | Mineralogy.....                            | Geology.....  | Geology.....                            |
|                  | 2      | Analytical Geometry.....                   | Analytical Geom. and Calculus<br>(Elective with Ger.) | Calculus (elective with Ger.)           |
|                  | 3      | English (opt. with German)                 | Science of Agriculture.....                           | Botany and Scientific Hort.             |
|                  | 4      | Analytical Chemistry.....                  | Analytical Chemistry.....                             | Analytical Chemistry.....               |
|                  | 5      | German (opt. with English)                 | German (elect. with Calculus)                         | German (elect. with Calculus)           |
| SENIOR CLASS.    | 1      | Meteorology.....                           | Stock-Breeding, Embryology<br>and Veterinary Science  | Scientific Agriculture.....             |
|                  | 2      | Analytical Chemistry.....                  | Industrial Chemistry.....                             | Agricultural Chemistry.....             |
|                  | 3      | Astronomy.....                             | .....   | .....                                   |
|                  | 4      | .....                                      | Surveying.....  | Surveying (opt. with Ger.)              |
|                  | 4      | German (optional) or                       | German (optional) or                                  | German (opt. with Surveying)            |
|                  | 5      | Psychology.....                            | Psychology and Ethics.....                            | Political Economy.....                  |

(Course of Lectures one hour per week, through Senior year, on Origin of Language and History.)

*General Science Course for Bachelor of Science (B. S.).*

| CLASSES.          | HOURS. |                              |  |                                 |
|-------------------|--------|------------------------------|--|---------------------------------|
|                   |        | FIRST TERM.                  | SECOND TERM                                    | THIRD TERM.                     |
| A CLASS.          |        | Same as Agricultur'l Course. |  |                                 |
| SUB-FRESH. CLASS. |        | Same as Agricultur'l Course. |  |                                 |
| FRESHMAN CLASS.   |        | Same as Agricultur'l Course. |  |                                 |
| SOPHOMORE CLASS.  |        | Same as Agricultur'l Course. |  |                                 |
| JUNIOR CLASS.     | 1      | Mineralogy.....              | Geology.....                                   | Geology. ....                   |
|                   | 2      | Analytical Geometry          | Anal. Geom. and Calculus or Calculus or German |                                 |
|                   | 3      | English or German            | English  | Botany and Sci. Horticulture    |
|                   | 4      | Anal. Chemistry, Qual....    | Anal. Chemistry, Qual....                      | Anal. Chemistry, Quant...       |
| SENIOR CLASS.     | 1      | Zoology. ....                | Zoology ....                                   | Assaying, Mining and Metallurgy |
|                   | 2      | Analyt. Chemistry, Quant.    | Industrial Chemistry..                         | Agric. Chemical Analysis...     |
|                   | 3      | Astronomy.....               | Thermo-Dynamics .....                          | Electricity.....                |
|                   | 4      | .....                        | Surveying. ....                                | .....                           |
|                   | 4      | .....                        | German or.....                                 | .....                           |
|                   | 5      | Psychology or German....     | Psychology and Ethics.....                     | Pol. Economy or German.         |

## Short Agricultural Course.

[illegible]

*Mechanical Engineering Course for Bachelor of Mechanical Engineering (B.M.E.).*

| CLASSES.         | HOURS. | FIRST TERM.   | SECOND TERM.   | THIRD TERM.                                     |
|------------------|--------|---|--|---|
| A CLASS          | 1      | English.....  | English.....   | English.....                                    |
|                  | 2      | Arithmetic.....   | Arithmetic.....  | Arithmetic.....                                 |
|                  | 3      | Geography.....  | U. S. History.....                                     | U. S. History.....                              |
|                  | 4      | Reading and Spelling                                    | Reading and Spelling                                   | Reading and Spelling                            |
| SUB-FRESH CLASS. | 1      | Elementary Zoology (3) /<br>Elocution (2).              |  | Book-Keeping .....                              |
|                  | 2      |   | Elementary Physiology (3) /<br>Elocution (2).....      |   |
|                  | 3      | Geometry.....   | Algebra.....   | Algebra.....                                    |
|                  | 4      | Physical Geography.....                                 | Physical Geography and<br>Book-Keeping .....           | Elementary Botany (3)..<br>Elocution (2).....   |
|                  | 5      | English.....  | English.....   | English.....                                    |
| FRESHMAN CLASS.  | 1      | Algebra .....   | Algebra and Geometry.....                              | Geometry.....                                   |
|                  | 2      | English.....  | English.....   | English.....                                    |
|                  | 4      | Physics.....  | Physics.....   | Physics.....                                    |
|                  | 5      | Shop-work Appliances. ....                              | Roads, Streets and Pavements.....                      | Descriptive Geometry.....                       |
| SOPHOMORE CLASS. | 1      | General History.....                                    | General History.....                                   |   |
|                  | 2      | Heat.....   |  | Elements of Mechanism....                       |
|                  | 3      | General Chemistry.....                                  | General Chemistry.....                                 | General Chemistry.....                          |
|                  | 4      |   | Surveying.....   | Surveying.....                                  |
|                  | 5      | Geometry.....   | Plane Trigonometry .....                               | Spherical Trigonometry....                      |
| JUNIOR CLASS.    | 1      | Machinery and Mill-work...                              | Machinery and Mill-work...                             | Steam Engineering.....                          |
|                  | 2      | Analytical Geometry.....                                | Analytical Geometry and<br>Calculus.....               |   |
|                  | 3      | Sanitary Engineering.....                               | Steam Engineering.....                                 | Element of Mechanics.....                       |
|                  | 4      | Analytical Chemistry.....                               | Analytical Chemistry.....                              | Analytical Chemistry.....                       |
|                  | 5      | German (Elective).....                                  | German (Elective) .....                                | German (Elective).....                          |
| SENIOR CLASS.    | 1      | Applied Mechanics.....                                  | Applied Mechanics.....                                 |   |
|                  | 2      | Friction and Lubrication<br>(optional with German)...   | Method of Least Squares<br>(optional with German)...   | Hydraulic Engineering.....                      |
|                  | 3      | Astronomy.....  | Lectures on Designing.....                             | Electricity.....                                |
|                  | 4      | German (optional with Friction<br>and Lubrication)..... | German (optional with Method<br>of Least Squares)..... | Specifications, Contracts and<br>Estimates..... |
|                  | 5      | Mechanical Engineering.....                             | Mechanical Engineering.....                            | Mechanical Engineering.....                     |



*Civil Engineering Course for Bachelor of Civil Engineering (B. C. E.).*

| CLASS             | HOURS | FIRST TERM.                                    | SECOND TERM.                                   | THIRD TERM.                                    |
|-------------------|-------|--|--|--|
| A CLASS           |       | Same as Mechanical Engineering Course.         | Same as Mechanical Engineering Course.         | Same as Mechanical Engineering Course          |
| SUB-FRESH. CLASS. |       | Same as Mechanical Engineering Course.         | Same as Mechanical Engineering Course.         | Same as Mechanical Engineering Course.         |
| FRESHMAN CLASS.   |       | Same as Mechanical Engineering Course.         | Same as Mechanical Engineering Course.         | Same as Mechanical Engineering Course          |
| SOPHOMORE CLASS.  |       | Same as Mechanical Engineering Course.         | Same as Mechanical Engineering Course.         | Same as Mechanical Engineering Course.         |
| JUNIOR CLASS.     | 1     | Road Engineering.....                          | Geology. ....                                  | Geology. ....                                  |
|                   | 2     | Analytical Geometry . . .                      | Analytical Geometry and Calculus.              | Calculus.....                                  |
|                   | 3     | Sanitary Engineering.....                      | Road Engineering.....                          | Elements of Mechan cs.                         |
|                   | 4     | Analytical Chemistry                           | Analytical Chemistry                           | Analytical Chemistry                           |
|                   | 5     | German (Elective).....                         | German (Elective).....                         | German (Elective).....                         |
| SENIOR CLASS.     | 1     | Applied Mechanics.....                         | Applied Mechanics.....                         | .....  |
|                   | 2     | Steam Engineering (Optional with German)       | Method of Least Squares (Optional with German) | Hydraulic Engineering                          |
|                   | 3     | Astronomy. ....                                | Lectures on Designing. ....                    | Electricity.....                               |
|                   | 4     | German (Optional with German Engineering)..... | Method of Least Squares                        | Specifications, Contracts, and Estimates . . . |
|                   | 5     | Civil Engineering                              | Civil Engineering                              | Civil Engineering                              |

*Mechanic Arts Course.*

| CLASSES.          | HOURS. | FIRST TERM.                            | SECOND TERM.                           | THIRD TERM.                            |
|-------------------|--------|--|--|--|
|                   |        |  |  |  |
| A CLASS.          |        | Same as Mechanical Engineering Course. | Same as Mechanical Engineering Course. | Same as Mechanical Engineering Course. |
| SUB-FRESH. CLASS. |        | Same as Mechanical Engineering Course. | Same as Mechanical Engineering Course. | Same as Mechanical Engineering Course. |
| FRESHMAN CLASS.   |        | Same as Mechanical Engineering Course. | Same as Mechanical Engineering Course. | Same as Mechanical Engineering Course. |
| SOPHOMORE CLASS.  | 1      | General History.....                   | General History.....                   | Steam Engineering.                     |
|                   | 2      | Steam Engineering.....                 | Steam Engineering. ....                | Elements of Mechanism....              |
|                   | 3      | General Chemistry.....                 | General Chemistry.....                 | Elements of Mechanics                  |
|                   | 4      | ..                                     |  |  |
|                   | 5      | Geometry                               | Plane Trigonometry                     | Spherical Trigonometry....             |

*Young Ladies' Course for Bachelor of Science (B. S.).*

| CLASSES.         | HOURS. | FIRST TERM.                | SECOND TERM.                | THIRD TERM.                  |
|------------------|--------|----------------------------|-----------------------------|------------------------------|
| FRESHMAN CLASS.  | 1      | Algebra .....              | Algebra and Geometry .....  | Geometry .....               |
|                  | 2      | English .....              | English .....               | English .....                |
|                  | 3      | Physiology .....           | .....                       | .....                        |
|                  | 4      | Physics .....              | Physics .....               | Physics .....                |
|                  | 5      | .....                      | Zoology .....               | Botany .....                 |
| SOPHOMORE CLASS. | 1      | General History .....      | General History .....       | General History .....        |
|                  | 2      | Heat .....                 | Biology (Entomology) .....  | Dairy Husbandry .....        |
|                  | 3      | General Chemistry .....    | General Chemistry .....     | General Chemistry .....      |
|                  | 4      | .....                      | .....                       | .....                        |
|                  | 5      | Geometry .....             | Plane Trigonometry .....    | Spherical Trigonometry ..... |
| JUNIOR CLASS.    | 1      | Mineralogy .....           | Geology .....               | Geology .....                |
|                  | 2      | Analytical Geometry .....  | Analytical Geometry .....   | .....                        |
|                  | 3      | English Literature .....   | English Literature .....    | English Literature .....     |
|                  | 4      | Analytical Chemistry ..... | Analytical Chemistry .....  | Analytical Chemistry .....   |
|                  | 5      | .....                      | .....                       | Political Economy .....      |
| SENIOR CLASS.    | 1      | Zoology .....              | .....                       | .....                        |
|                  | 2      | Anglo-Saxon .....          | Anglo-Saxon .....           | English Philology .....      |
|                  | 3      | Astronomy .....            | History of Education .....  | Electricity .....            |
|                  | 4      | .....                      | Surveying .....             | Logic .....                  |
|                  | 5      | Psychology .....           | Psychology and Ethics ..... | Ethics .....                 |

NOTE.—The Studies in the Preparatory Classes of this Course are the same as those of corresponding classes in the Classical Course except Latin.

Young ladies may take French (omitting Physiology) in Freshman and Sophomore Classes, and German in Junior and Senior Classes; or they may substitute Latin for one of the prescribed studies throughout the course. In either case, they will be entitled to the degree of Bachelor of Letters (B. Let.).

*Classical Course for Bachelor of Arts (B. A.).*

| CLASSES.         | HOURS. | FIRST TERM.                                  | SECOND TERM.                                | THIRD TERM.                   |
|------------------|--------|--|---|-------------------------------|
| A CLASS.         | 1      | Eng. Grammar and Comp'n                      | Eng. Grammar and Comp'n                     | Eng. Grammar and Comp'n.      |
|                  | 2      | Arithmetic .....                             | Arithmetic .....                            | Arithmetic .....              |
|                  | 3      | Geography (optional)                         | United States History                       | United States History (opt'l) |
|                  | 4      | Reading and Spelling .....                   | Reading and Spelling (opt'l)                | Reading and Spelling .....    |
|                  | 5      | Latin (Gundersleeve's Grammar and Exercises) | Latin Grammar and Lessons                   | Latin Grammar and Lessons     |
| SUB-FRESH CLASS. | 1      | Eng. Zoology 3, Botany 2                     | Eng. Physics 3, 2, 1                        | Book-Keeping (optional)       |
|                  | 2      | Latin (Gundersleeve's Grammar and Exercises) | Latin, Cicero or Cato                       | Latin, Cicero or Cato         |
|                  | 3      | Geometry                                     | Algebra                                     | Algebra                       |
|                  | 4      | Physics, Geography (opt'l)                   | Physics and Book-Keeping (opt'l)            | Botany 3, 1, 2                |
|                  | 5      | Eng. Analysis and Comp'n                     | Eng. Analysis and Comp'n                    | Eng. Analysis and Comp'n      |
| FRESHMAN CLASS.  | 1      | Algebra .....                                | Algebra and Geometry .....                  | Geometry .....                |
|                  | 2      | English (optional) .....                     | English .....                               | English .....                 |
|                  | 3      | Greek or French .....                        | Greek or French .....                       | Greek or French .....         |
|                  | 4      | Physics .....                                | Physics (optional) .....                    | Elementary Botany (opt'l)     |
|                  | 5      | Latin .....                                  | Latin .....                                 | Latin .....                   |
| SOPHOMORE CLASS. | 1      | General History (optional)                   | General History (optional)                  | General History .....         |
|                  | 2      | Latin .....                                  | Latin .....                                 | Latin .....                   |
|                  | 3      | General Chemistry .....                      | General Chemistry .....                     | General Chemistry .....       |
|                  | 4      | Greek or French .....                        | Greek or French .....                       | Greek or French .....         |
|                  | 5      | Geometry .....                               | Plane Trigonometry .....                    | Spher. Trigonometry (opt'l)   |
| JUNIOR CLASS.    | 1      | Mineralogy (optional) .....                  | Geology .....                               | Latin .....                   |
|                  | 2      | Analytical Geometry .....                    | Analytical Geometry and Calculus (optional) | Calculus (optional)           |
|                  | 3      | English Literature .....                     | English Literature .....                    | English Literature .....      |
|                  | 4      | Latin .....                                  | Latin .....                                 | Logic .....                   |
|                  | 5      | Greek or German .....                        | Greek or German .....                       | Greek or German .....         |
| SENIOR CLASS.    | 1      | Latin .....                                  | Latin (optional) .....                      | Latin .....                   |
|                  | 2      | Anglo-Saxon .....                            | Anglo-Saxon .....                           | English Philology .....       |
|                  | 3      | Greek—Astronomy (opt'l)                      | Greek .....                                 | Greek .....                   |
|                  | 4      | or German .....                              | or German—Surveying .....                   | German .....                  |
|                  | 5      | Psychology .....                             | Psychology and Ethics .....                 | Ethics and Political Economy  |



*Normal Course for Licentiate of Instruction (L. I.).*

| CLASSES.            | HOURS. | FIRST TERM.                     | SECOND TERM.                             | THIRD TERM.                           |
|---------------------|--------|---------------------------------|--|---------------------------------------|
| A CLASS.            | 1      | English Grammar and Composition | English Grammar and Composition          | English Grammar and Composition       |
|                     | 2      | Arithmetic                      | Arithmetic                               | Arithmetic                            |
|                     | 3      | Geography                       | U. S. History                            | U. S. History                         |
|                     | 4      | Reading and Spelling.....       | Reading and Spelling.....                | Reading and Spelling.....             |
|                     | 5      | Latin (elective).....           | Latin (elective).....                    | Latin (elective).....                 |
| SUB-FRESHMAN CLASS. | 1      | Pedagogy 2 / Psychology 3       | Latin / Elem. Pedagogy                   | Pedagogy / Book-Keeping               |
|                     | 2      | Latin or Elem. Chemistry        | Pedagogy.....                            | Latin.....                            |
|                     | 3      | Geometry.....                   | Algebra.....                             | Algebra.....                          |
|                     | 4      | Phys. Geography (elective)      | Physical Geography and Elementary Botany | Book-Keeping (elective).              |
|                     | 5      | Eng. Analysis and Composition   | English Analysis and Composition.....    | English Analysis and Composition..... |
| FRESHMAN CLASS.     | 1      | Algebra.....                    | Algebra and Geometry.....                | Geometry.....                         |
|                     | 2      | English (elective).....         | English.....                             | English.....                          |
|                     | 3      | Physiology.....                 | History of Education.....                | School Management.....                |
|                     | 4      | Physics.....                    | Physics (elective).....                  | Botany (elective).....                |
|                     | 5      | Latin.....                      | Latin.....                               | Latin.....                            |
| SOPHOMORE CLASS.    | 1      | General History (elective)..... | General History (elective)               | General History                       |
|                     | 2      | Latin.....                      | Latin.....                               | Latin.....                            |
|                     | 3      | General Chemistry.....          | General Chemistry.....                   | Psychology.....                       |
|                     | 4      | Philosophy of Education         | Surveying.....                           | Const. and School Law.....            |
|                     | 5      | Geometry.....                   | Plane Trigonometry.....                  | Ethics (elective).....                |

NOTE--A four-year college course embracing the work of the last two years of the Young Ladies' Course, General Science Course or B. A. Course will entitle the student to the degree of Bachelor of Letters, Bachelor of Science, or Bachelor of Arts respectively.

In all courses of study, original orations and essays will be periodically required of the Senior and Junior classes, and elementary exercises of the Sophomore and Freshman classes.

*Schedule for Practical Exercises—Afternoon Work.*

| Class.     | Day          | AGRICULTURAL COURSE. |                |                | SHORT AGRICULTURAL COURSE. |                 |                |
|------------|--------------|----------------------|----------------|----------------|----------------------------|-----------------|----------------|
|            |              | First Term.          | Second Term    | Third Term.    | First Term                 | Second Term.    | Third Term     |
| A Class.   | Monday ..    | Shop                 | Draw and drill | Shop           | Shop                       | Draw and drill  | Shop           |
|            | Tuesday ..   | Draw and drill       | Shop           | Draw and drill | Draw and drill             | Shop            | Draw and drill |
|            | Wednesday .. | Farm                 | Draw and drill | Farm           | Farm                       | Draw and drill  | Farm           |
|            | Thursday ..  | Draw and drill       | Farm           | Draw and drill | Draw and drill             | Farm            | Draw and drill |
|            | Friday ..    | Farm                 | Farm           | Farm           | Farm                       | Farm            | Farm.          |
|            | Saturday ..  |                      |                |                |                            |                 |                |
| Sub-Fresh. | Monday ...   | Draw and drill       | Farm           | Draw and drill | Draw and drill             | Farm            | Draw and drill |
|            | Tuesday ..   | Farm                 | Draw and drill | Farm           | Farm                       | Draw and drill  | Farm           |
|            | Wednesday .. | Draw and drill       | Farm           | Draw and drill | Draw and drill             | Farm            | Draw and drill |
|            | Thursday ..  | Farm                 | Draw and drill | Farm           | Farm                       | Draw and drill  | Farm           |
|            | Friday ..    |                      | Shop           |                |                            | Shop            |                |
|            | Saturday ..  | Shop                 |                | Shop           | Shop                       |                 | Shop           |
| Fresh.     | Monday ...   | Farm                 | Draw and drill | Farm           | Farm                       | Draw and drill  | Farm           |
|            | Tuesday ..   | Draw and drill       | Farm           | Draw and drill | Draw and drill             | Farm            | Draw and drill |
|            | Wednesday .. | Farm                 | Draw and drill | Phys. lab'y    | Farm                       | Draw and drill  | Biol. lab'y    |
|            | Thursday ..  | Draw and drill       | Biol. lab'y    | Draw and drill | Draw and drill             | Biol. lab'y     | Draw and drill |
|            | Friday ..    | Shop                 |                | Shop           | Shop                       |                 | Shop           |
|            | Saturday ..  |                      | Shop           |                |                            | Shop            |                |
| Sopho.     | Monday ..    | Draw and drill       | Farm           | Draw and drill | Draw and drill             | Farm            | Draw and drill |
|            | Tuesday ..   | Farm                 | Draw and drill | Farm           | Farm                       | Draw and drill. | Farm.          |
|            | Wednesday .. | Draw and drill       | Shop           | Draw and drill | Draw and drill             |                 | Draw and drill |
|            | Thursday ..  | Shop                 | Draw and drill | Shop           | Farm                       | Draw and drill. |                |
|            | Friday ..    | Biol. lab'y          | Biol. lab'y    |                | Biol. lab'y                | Biol. lab'y.    | Survey.        |
|            | Saturday ..  |                      |                | Chem. lab'y    |                            | Survey.         | Chem. lab'y.   |

NOTE.—Chemical Laboratory—Chem. lab'y; Biological Laboratory—Biol. lab'y; Physical Laboratory—Phys. lab'y; Geological Survey—Geol. survey; Draw—Drawing.

*Schedule for Practical Exercises—Afternoon Work—Continued.*

| Class.  | Day.        | AGRICULTURAL COURSE.   |                        |                        | SHORT AGRICULTURAL COURSE. |             |             |
|---------|-------------|------------------------|------------------------|------------------------|----------------------------|-------------|-------------|
|         |             | First Term             | Second Term            | Third Term.            | First Term                 | Second Term | Third Term. |
| Junior. | Monday      | Farm                   | Farm and drill         | Farm.                  |                            |             |             |
|         | Tuesday     | Farm and drill         | Farm                   | Farm and drill         |                            |             |             |
|         | Wednesday   | Farm                   | Farm and drill         |                        |                            |             |             |
|         | Thursday    | Chem. lab'y and drill  |                        | Chem. lab'y and drill  |                            |             |             |
|         | Friday      | Chem. lab'y            | Chem. lab'y            | Chem. lab'y            |                            |             |             |
|         | Saturday    |                        | Geol. Survey           | Geol. Survey           |                            |             |             |
| Senior. | Monday ...  | Drill and farm . . . . | Farm . . . . .         | Farm and drill . .     |                            |             |             |
|         | Tuesday     | Farm                   | Farm and drill         | Chem. lab'y            |                            |             |             |
|         | Wednesday   | Chem. lab'y and drill  |                        | Chem. lab'y and drill. |                            |             |             |
|         | Thursday .. | Chem. lab'y . . . . .  | Chem. lab'y and drill. |                        |                            |             |             |
|         | Friday .... | Chem. lab'y . . . . .  | Chem. lab'y . . . . .  | Survey . . . . .       |                            |             |             |
|         | Saturday    | Farm                   | Survey                 | Farm                   |                            |             |             |

NOTE: Chemical Laboratory—Chem. lab'y; Biological Laboratory—Biol. lab'y; Physical Laboratory—Phys. lab'y; Geological Survey—Geol. survey; Draw—Drawing.

*Schedule for Practical Exercises—Afternoon Work—Continued.*

| Class.     | Day          | SCIENTIFIC COURSE |                   |                   | CIVIL ENGINEERING COURSE. |                   |                   |
|------------|--------------|-------------------|-------------------|-------------------|---------------------------|-------------------|-------------------|
|            |              | First Term.       | Second Term.      | Third Term.       | First Term.               | Second Term.      | Third Term.       |
| A Class    | Monday ..    | Farm or shop ..   | Draw and drill .. | Farm or shop ..   | Draw and drill ..         | Shop ..           | Draw and drill .. |
|            | Tuesday ..   | Draw and drill .. | Farm or shop ..   | Draw and drill .. | Shop ..                   | Draw and drill .. | Shop ..           |
|            | Wednesday .. | Farm or shop ..   | Draw and drill .. | Farm or shop ..   | Draw and drill ..         | Shop ..           | Draw and drill .. |
|            | Thursday ..  | Draw and drill .. | Farm or shop ..   | Draw and drill .. | Shop ..                   | Draw and drill .. | Shop ..           |
|            | Friday ..    | Farm or shop ..   |                   | Farm or shop ..   |                           | Shop ..           |                   |
|            | Saturday ..  |                   | Farm or shop ..   |                   | Shop ..                   |                   | Shop ..           |
| Sub-Fresh. | Monday ..    | Draw and drill .. | Farm or shop ..   | Draw and drill .. | Shop ..                   | Draw and drill .. | Shop ..           |
|            | Tuesday ..   | Farm or shop ..   | Draw and drill .. | Farm or shop ..   | Draw and drill ..         | Shop ..           | Draw and drill .. |
|            | Wednesday .. | Draw and drill .. | Farm or shop ..   | Draw and drill .. | Shop ..                   | Draw and drill .. | Shop ..           |
|            | Thursday ..  | Farm or shop ..   | Draw and drill .. | Farm or shop ..   | Draw and drill ..         | Shop ..           | Draw and drill .. |
|            | Friday ..    |                   | Farm or shop ..   |                   | Shop ..                   |                   | Shop ..           |
|            | Saturday ..  | Farm or shop ..   |                   | Farm or shop ..   |                           | Shop ..           |                   |
| Fresh.     | Monday ..    | Farm or shop ..   | Draw and drill .. | Farm or shop ..   | Draw and drill ..         | Shop ..           | Draw and drill .. |
|            | Tuesday ..   | Draw and drill .. | Farm or shop ..   | Draw and drill .. | Shop ..                   | Draw and drill .. | Shop ..           |
|            | Wednesday .. | Farm or shop ..   | Draw and drill .. | Biol. lab'y ..    | Draw and drill ..         | Shop ..           | Draw and drill .. |
|            | Thursday ..  | Draw and drill .. | Biol. lab'y ..    | Draw and drill .. | Shop ..                   | Draw and drill .. | Shop ..           |
|            | Friday ..    | Farm or shop ..   |                   | Farm or shop ..   |                           | Shop ..           |                   |
|            | Saturday ..  |                   | Farm or shop ..   |                   | Shop ..                   |                   | Shop ..           |
| Sopho.     | Monday ..    | Draw and drill .. | Farm or shop ..   | Draw and drill .. | Shop ..                   | Draw and drill .. |                   |
|            | Tuesday ..   | Farm or shop ..   | Draw and drill .. | Farm or shop ..   | Draw and drill ..         | Shop ..           | Draw and drill .. |
|            | Wednesday .. | Draw and drill .. | Farm or shop ..   | Draw and drill .. | Shop ..                   | Draw and drill .. | Survey ..         |
|            | Thursday ..  | Shop or farm ..   | Draw and drill .. | Shop or farm ..   | Draw and drill ..         | Shop ..           | Draw and drill .. |
|            | Friday ..    | Biol. lab'y ..    | Biol. lab'y ..    |                   |                           |                   | Survey ..         |
|            | Saturday ..  |                   |                   | Chem. lab'y ..    | Phys. lab'y ..            | Survey ..         | Chem. lab'y ..    |

**NOTE**—Chemical Laboratory—Chem. lab'y; Biological Laboratory—Biol. lab'y; Physical Laboratory—Phys. lab'y; Geographical Survey—Geol. survey; Draw—Drawing.



*Schedule for Practical Exercises—Afternoon Work—Continued.*

| Class   | Day         | SCIENTIFIC COURSE.     |                        |                        | CIVIL ENGINEERING COURSE. |                  |                |
|---------|-------------|------------------------|------------------------|------------------------|---------------------------|------------------|----------------|
|         |             | First Term             | Second Term.           | Third Term.            | First Term.               | Second Term.     | Third Term.    |
| Junior  | Monday      | Farm or shop           | Draw and drill . . . . | Biol. lab'y            | Draw and drill. . .       | Survey. . . . .  | Draw and drill |
|         | Tuesday     | Draw and drill         | Farm or shop           | Draw and drill         | Survey.                   | Draw and drill.  | Survey.        |
|         | Wednesday   | Farm or shop . . . .   | Draw and drill         | .....                  | Draw and drill. ....      | .....            | Draw and drill |
|         | Thursday .. | Chem. lab'y and drill  | .....                  | Chem. lab'y and drill  | Shop . . . . .            | Draw and drill.  | .....          |
|         | Friday      | Chem. lab'y....        | Chem. lab'y            | Chem. lab'y            | Chem. lab'y               | Chem. lab'y      | Chem. lab'y    |
|         | Saturday.   |                        | Geol. survey           | Geol. survey           |                           | Geol. survey     | Geol. survey.  |
| Senior. | Monday      | Shop or farm and drill |                        | Shop or farm and drill | Shop                      | Draw and drill.  | Survey         |
|         | Tuesday     | Biol. lab'y.           | Shop or farm and drill | Chem. lab'y            | Draw and drill            | Shop             | Draw and drill |
|         | Wednesday   | Shop or farm and drill | Biol. lab'y            | Chem. lab'y and drill  | Chem. lab'y               | Draw and drill   | Chem. lab'y    |
|         | Thursday    | Chem. lab'y            | Chem. lab'y and drill. | .....                  | Draw and drill.....       | Chem. lab'y..... | Draw and drill |
|         | Friday      |                        | Chem. lab'y            | Phys. lab'y            | Survey                    |                  | Phys. lab'y    |
|         | Saturday    | Farm or shop           | Survey                 | Farm or shop           |                           | Survey           |                |

NOTE—Chemical Laboratory—Chem. lab'y; Biological Laboratory—Biol. lab'y; Physical Laboratory—Phys. lab'y; Geological Survey—Geol. survey; Draw—Drawing.

*Schedule for Practical Exercises—Afternoon Work—Continued.*

| Class.     | Day.      | MECHANICAL ENGINEERING COURSE |                 |                 | MECHANIC ARTS COURSE |                 |                 |
|------------|-----------|-------------------------------|-----------------|-----------------|----------------------|-----------------|-----------------|
|            |           | First Term.                   | Second Term.    | Third Term.     | First Term.          | Second Term.    | Third Term.     |
| A Class.   | Monday    | Draw and drill.               | Shop.           | Draw and drill. | Draw and drill.      | Shop.           | Draw and drill. |
|            | Tuesday   | Shop.                         | Draw and drill. | Shop.           | Shop.                | Draw and drill. | Shop.           |
|            | Wednesday | Draw and drill.               | Shop.           | Draw and drill. | Draw and drill.      | Shop.           | Draw and drill. |
|            | Thursday  | Shop.                         | Draw and drill. | Shop.           | Shop.                | Draw and drill. | Shop.           |
|            | Friday    |                               | Shop.           |                 | Shop.                | Shop.           |                 |
|            | Saturday  | Shop.                         |                 | Shop.           | Shop.                |                 | Shop.           |
| Sub-Fresh. | Monday    | Shop.                         | Draw and drill. | Shop.           | Shop.                | Shop.           | Shop.           |
|            | Tuesday   | Draw and drill.               | Shop.           | Draw and drill. | Draw and drill.      | Draw and drill. | Draw and drill. |
|            | Wednesday | Shop.                         | Draw and drill. | Shop.           | Shop.                | Shop.           | Shop.           |
|            | Thursday  | Draw and drill.               | Shop.           | Draw and drill. | Draw and drill.      | Draw and drill. | Draw and drill. |
|            | Friday    | Shop.                         |                 | Shop.           | Shop.                |                 | Shop.           |
|            | Saturday  |                               | Shop.           |                 |                      | Shop.           |                 |
| Fresh.     | Monday    | Draw and drill.               | Shop.           | Draw and drill. | Draw and drill.      | Shop.           | Draw and drill. |
|            | Tuesday   | Shop.                         | Draw and drill. | Shop.           | Shop.                | Draw and drill. | Shop.           |
|            | Wednesday | Draw and drill.               | Shop.           | Draw and drill. | Draw and drill.      | Shop.           | Draw and drill. |
|            | Thursday  | Shop.                         | Draw and drill. | Shop.           | Shop.                | Draw and drill. | Shop.           |
|            | Friday    |                               | Shop.           |                 |                      | Shop.           |                 |
|            | Saturday  | Shop.                         |                 | Shop.           | Shop.                |                 | Shop.           |
| Sopho.     | Monday    | Shop.                         | Draw and drill. | Shop.           | Shop.                | Draw and drill. | Shop.           |
|            | Tuesday   | Draw and drill.               | Shop.           | Draw and drill. | Draw and drill.      | Shop.           | Draw and drill. |
|            | Wednesday | Shop.                         | Draw and drill. | Shop.           | Shop.                | Draw and drill. | Shop.           |
|            | Thursday  | Draw and drill.               | Shop.           | Draw and drill. | Draw and drill.      | Shop.           | Draw and drill. |
|            | Friday    |                               |                 | Survey.         |                      |                 |                 |
|            | Saturday  | Phys. lab'y.                  | Survey.         | Chem. lab'y.    | Phys. lab'y.         | Shop.           | Chem. lab'y.    |

NOTE.—Chemical Laboratory—Chem. Lab'y.; Biological Laboratory—Bio. Lab'y.; Physical Laboratory—Phys. Lab'y.; Geological Survey—Geol. survey; Draw—Drawing.

*Schedule for Practical Exercises—Afternoon Work—Continued.*

| Class.  | Day.           | MECHANICAL ENGINEERING COURSE. |                       |                       | MECHANIC ARTS COURSE. |              |             |
|---------|----------------|--------------------------------|-----------------------|-----------------------|-----------------------|--------------|-------------|
|         |                | First Term.                    | Second Term.          | Third Term.           | First Term.           | Second Term. | Third Term. |
| Junior. | Monday . . .   | Draw and drill. . . .          | Shop. . . . .         | Draw and drill. . . . |                       |              |             |
|         | Tuesday . . .  | Shop. . . . .                  | Draw and drill. . . . | Shop. . . . .         |                       |              |             |
|         | Wednesday . .  | Draw and drill. . . .          | Shop. . . . .         | Draw and drill. . . . |                       |              |             |
|         | Thursday . . . | Shop. . . . .                  | Draw and drill. . . . | Shop. . . . .         |                       |              |             |
|         | Friday . . . . | Chem. lab'y . . . . .          | Chem. lab'y . . . . . | Chem. lab'y . . . . . |                       |              |             |
|         | Saturday . . . |                                |                       |                       |                       |              |             |
| Senior. | Monday . . . . | Shop. . . . .                  | Draw and drill. . . . | Shop. . . . .         |                       |              |             |
|         | Tuesday . . .  | Draw and drill. . . .          | Shop. . . . .         | Draw and drill. . . . |                       |              |             |
|         | Wednesday . .  | Chem. lab'y . . . . .          | Draw and drill. . . . | Chem. lab'y . . . . . |                       |              |             |
|         | Thursday . . . | Draw and drill. . . .          | Chem. lab'y . . . . . | Draw and drill. . . . |                       |              |             |
|         | Friday . . . . | Shop. . . . .                  | Shop. . . . .         | Phys. lab'y . . . . . |                       |              |             |
|         | Saturday . . . |                                |                       |                       |                       |              |             |

**NOTE**—Chemical Laboratory—Chem. lab'y; Biological Laboratory—Biol. lab'y; Physical Laboratory—Phys. lab'y; Geological Survey—Geol. survey; Draw—Drawing.

*Schedule for Practical Exercises—Afternoon Work—Continued.*

|            | Day       | NORMAL COURSE. |                |                | CLASSICAL COURSE. |                |                           |
|------------|-----------|----------------|----------------|----------------|-------------------|----------------|---------------------------|
|            |           | First Term.    | Second Term.   | Third Term.    | First Term.       | Second Term.   | Third Term.               |
| A. Class.  | Monday    | Draw and drill | Farm or shop.  | Draw and drill | Farm or shop.     | Draw and drill | Farm or shop.             |
|            | Tuesday   | Shop or farm   | Draw and drill | Farm or shop.  | Draw and drill    | Farm or shop.  | Draw and drill.           |
|            | Wednesday | Draw and drill | Farm or shop.  | Draw and drill | Farm or shop.     | Draw and drill | Farm or shop.             |
|            | Thursday  | Shop or farm   | Draw and drill | Farm or shop.  | Draw and drill    | Farm or shop.  | Draw and drill            |
|            | Friday    | Shop or farm   | Farm or shop.  | Farm or shop.  | Farm or shop.     | Farm or shop.  | Farm or shop.             |
|            | Saturday  | Shop or farm   |                | Farm or shop.  |                   | Farm or shop.  |                           |
| Sub-Fresh. | Monday    | Shop or farm   | Draw and drill | Farm or shop.  | Draw and drill    | Farm or shop.  | Draw and drill            |
|            | Tuesday   | Draw and drill | Shop or farm   | Draw and drill | Farm or shop.     | Draw and drill | Farm or shop.             |
|            | Wednesday | Farm or shop.  | Draw and drill | Farm or shop.  | Draw and drill    | Farm or shop.  | Draw and drill            |
|            | Thursday  | Draw and drill | Farm or shop.  | Draw and drill | Farm or shop.     | Draw and drill | Farm or shop.             |
|            | Friday    | Shop or farm   | Farm or shop.  | Farm or shop.  | Farm or shop.     | Farm or shop.  | Farm or shop.             |
|            | Saturday  |                | Farm or shop.  |                | Farm or shop.     |                | Farm or shop.             |
| Fresh.     | Monday    | Draw and drill | Farm or shop.  | Draw and drill | Farm or shop.     | Draw and drill | Farm or shop.             |
|            | Tuesday   | Farm or shop.  | Draw and drill | Farm or shop.  | Draw and drill    | Farm or shop.  | Draw and drill.           |
|            | Wednesday | Draw and drill | Farm or shop.  | Draw and drill | Farm or shop.     | Draw and drill | Biol. lab. or Chem. shop. |
|            | Thursday  | Farm or shop.  | Draw and drill | Farm or shop.  | Draw and drill    | Farm or shop.  | Draw and drill.           |
|            | Friday    | Farm or shop.  | Farm or shop.  | Farm or shop.  | Farm or shop.     | Farm or shop.  | Farm or shop.             |
|            | Saturday  | Farm or shop.  |                | Farm or shop.  |                   | Farm or shop.  |                           |
| Sopho.     | Monday    | Farm or shop.  | Draw and drill | Farm or shop.  | Draw and drill    | Farm or shop.  | Draw and drill            |
|            | Tuesday   | Draw and drill | Farm or shop.  | Draw and drill | Farm and shop.    | Draw and drill | Farm or shop.             |
|            | Wednesday | Farm or shop.  | Draw and drill | Draw and drill | Draw and drill    | Farm or shop.  | Draw and drill            |
|            | Thursday  | Draw and drill | Farm or shop.  | Draw and drill | Farm and shop.    | Draw and drill | Farm or shop.             |
|            | Friday    | Survey         | Survey         | Survey         | Phys. lab'y       | Farm or shop.  | Chem. lab'y               |
|            | Saturday  | Phys. lab'y    | Survey         | Chem. lab'y    | Phys. lab'y       | Farm or shop.  | Chem. lab'y               |

NOTE: Chemical Laboratory—Chem. lab'y; Biological Laboratory—Biol. lab'y; Physical Laboratory—Phys. lab'y; Geological Survey—Geol. survey; Draw—Drawing.



*Schedule for Practical Exercises—Afternoon Work—Continued.*

| Class.  | Day.         | NORMAL COURSE |             |            | CLASSICAL COURSE     |                      |                 |
|---------|--------------|---------------|-------------|------------|----------------------|----------------------|-----------------|
|         |              | First Term    | Second Term | Third Term | First Term           | Second Term          | Third Term      |
| Junior. | Monday ..    | .....         | .....       | .....      | Farm or shop .....   | Draw and drill ..... | .....           |
|         | Tuesday ..   | .....         | .....       | .....      | Draw and drill ..... | .....                | Draw and drill. |
|         | Wednesday .. | .....         | .....       | .....      | Farm or shop .....   | Draw and drill ..... | Farm or shop.   |
|         | Thursday ..  | .....         | .....       | .....      | Draw and drill ..... | Farm or shop .....   | Draw and drill. |
|         | Friday ..... | .....         | .....       | .....      | Chem. lab'y .....    | Chem. lab'y .....    | Chem. lab'y.    |
|         | Saturday ..  | .....         | .....       | .....      | .....                | Geol. survey .....   | Geol. survey.   |
| Senior. | Monday ..    | .....         | .....       | .....      | Draw and drill ..... | Farm or shop .....   | Draw and drill. |
|         | Tuesday ..   | .....         | .....       | .....      | Farm or shop .....   | Draw and drill ..... | Chem. lab'y.    |
|         | Wednesday .. | .....         | .....       | .....      | Draw and drill ..... | .....                | Draw and drill  |
|         | Thursday ..  | .....         | .....       | .....      | Chem. lab'y .....    | Draw and drill ..... | Farm or shop.   |
|         | Friday ..... | .....         | .....       | .....      | .....                | Chem. lab'y .....    | Survey.         |
|         | Saturday ..  | .....         | .....       | .....      | Farm or shop .....   | Survey .....         | .....           |

NOTE.—Chemical Laboratory—Chem. lab'y; Entomological Laboratory—Ent. lab'y; Physical Laboratory—Phys. lab'y; Geological Survey—Geol. survey; Draw—Drawing.

## POST GRADUATE COURSES.

Requirements for the Degree of Master of Arts (M. A.).

Applicants for this degree must have previously taken the Degree of B. A. and in addition must take, at the University, for a full scholastic year, four daily studies appointed by the Faculty.

Requirements for the Degree of Master of Science (M. S.).

Applicants for this degree must have previously taken the Degree of B. S., and in addition must take, at the University, for a full scholastic year, four daily studies appointed by the faculty.

Requirements for the Degree of Doctor of Philosophy (Ph. D.).

1. This degree will be conferred for distinguished attainments, as shown by examination and thesis, in any one of the five following languages: Latin, Greek, German, French and English, together with subordinate attainments in two others of the five; or, for distinguished attainments in one principal and two subordinate of the following sciences: Chemistry, Physics, Geology, Biology; or, for distinguished attainments in Philosophy or in Pure and Applied Mathematics.

2. This degree shall be open to persons who have received the Degree of B. A. or B. S., at this or other reputable institutions; or B. C. E., or B. M. E. from this institution; or to any person who can, by a thorough examination, show attainments equal to those indicated by these degrees.

3. No applicant shall be admitted to examination for this degree before two full scholastic years from the date of his admission to the course, shall have passed. The last of these two years must be passed by the candidate in resident study at the University.

4. Applicants for this degree must state in their application what particular line of study they wish to pursue.

5. A thesis, showing original research shall be required of every applicant, the subject of which shall be announced and passed upon by a committee of the faculty at least one year before the time set for the final examination, and the thesis itself must be presented to the committee two months before admission to the examination. Twenty-five copies of the approved and printed thesis shall be placed in the University Library.

6. All applicants for this degree, who have previously taken the B. S., M. S., B. C. E., or B. M. E. Degree, must by the end of the first year of the course, be sufficiently conversant with French and German to read with ease any scientific work written in these languages.

## OUTLINE OF STUDIES.

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### DEPARTMENT OF AGRICULTURE, CHEMISTRY AND MINERALOGY.

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GEO. D. PURINTON, PROFESSOR.

—————, ADJUNCT PROFESSOR.

—————, FOREMAN OF THE FARM.

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The equipment of the Agricultural Department consists of 160 acres of land, 120 acres of which is susceptible of cultivation, and sixty acres of which is actually under cultivation; a large and commodious barn, containing stalls for horses and cows, abundant storage room for hay and feed, with lifting forks and storage car, granary, vegetable and tool storage rooms, central hallway and threshing floor, open shed extending full length of the barn, and ample means of ventilation at the top of the roof; an artesian well, with windmill for hoisting, and an elevated iron tank for storing water, which is piped to different parts of the farm; one team of elegant blooded draft horses, one team of serviceable mules, two wagons, mowing machines, reapers, rakes and other implements and machinery suitable to the purposes of a well equipped farm.

A large part of the tillable land has been recently cleared and put under cultivation, and more than half of it has been grubbed free from stumps and roots, and all enclosed with a neat fence of wire and boards, consisting of one board at the bottom one foot wide, followed by three barbed wires, one six-inch board and two wires at the top, the whole being more than five feet in height.

The great care with which the stumps and roots of the new ground have been removed renders this portion of the farm as efficient in production as that of most tracts which have been cultivated for years. A new orchard of choice varieties of fruit was planted near the University two years ago, and is now in a fine state of cultivation and growth.

At the beginning of the present growing season (1887), a number of *experimental plats* were laid off and planted to more than sixty varieties of standard forage, field and garden plants, under the direction of the Superintendent of Agriculture, and bid fair to furnish sufficient seed to stock the farm with these several varieties.

Several acres of corn are in successful cultivation and will be converted into ensilage and preserved in silos which have been erected for that purpose. Fine breeds of cattle and horses, and dairy and creamery appliances will be added as the wants and facilities of the Department demand.

#### THE BARN,

recently erected, is 38x60 feet with its greatest length north and south, contains five stalls with mangers, 6x14 feet, one central hallway closely floored 12x38 feet, one granary 12x15 feet, one room for storing vegetables 12x15 feet, one room for agricultural implements 12x15 feet, one general storage room 12x15 feet, and a loft or mow for storing hay and feed 60x38 feet, provided with a central carriage-way and storing car connecting with the large lifting fork at the end of the building. There are two large and well constructed ventilators raised above the comb of the roof, and in the rear of each stall is a suitable opening for ventilating purposes.

The barn, stock and farm are under the direct care of the foreman of the farm, who is an experienced practical farmer, and lives upon the premises.

In the application of scientific principles to practical agriculture care will be had for the special needs of Arkansas and the further development of her farming interests.



## AGRICULTURE.

### THE COURSE OF STUDY.

The design of this course is to meet the wants of those who desire a knowledge of the sciences which underlie theoretic and practical agriculture, and at the same time to furnish a good English education.

The course has been drawn so as to embrace a full course in Scientific Agriculture and Horticulture, and as much English, Mathematics, and General Science, as practicable within its scope. The principles taught are made practical by daily work, on the part of the student, in the Laboratory, workshop and field, and for such work the student is allowed a compensation of three cents per hour for shop, and five cents per hour for farm work.

It is the object of the course to apply the principles of Science to the manifold and diversified industries of the farm and home, and in so far as practicable, to promote a study of the problems which underlie economic production, and uniformity in agricultural methods and practice.

It is believed that the labor system, in connection with the scientific phases of the course, will render it invaluable to the student, by giving him an intimate knowledge of farm management, stock-breeding, dairy husbandry, and other details of practical farming.

The course embraces in the Freshman year, a theoretic and practical study of the location and selection of farms, laying out of experimental plats, fertilization of worn lands; farm buildings, etc.

In the Sophomore year stock-feeding and dairy husbandry are studied, with special reference to their economic importance, their chemical relations, the adulteration of food, imitations of butter, etc.

The Junior year will be employed in the study of the chemical composition of soils and plants, their adaptation to each other and rotation of crops. Stock-breeding, veterinary science, and the study of cereals, grasses, forage plants, pasturage and chemical fertilization, are taken up in regular order during the Senior year.

Practical Agriculture, or Horticulture and Landscape Gardening are required throughout the course.

Students by laboring on the farm can earn nearly or quite enough to pay their board.

Instruction is given by lectures, text and reference books, and by practical work on the farm.

*Freshman Class*—Selection, laying out and improvement of farms and experimental plats—renewing of worn lands—erection and planning of farm buildings—preparation of composts.

*Sophomore Class*—Stock breeding—dairy husbandry.

*Junior Class*—Chemical composition of soils and plants, and their adaptability to each other—rotation of crops.

*Senior Class*—Lectures on Veterinary Science—study of the cereals, grasses, forage plants, pasturage—chemical fertilization.

Practical Agriculture or Horticulture throughout the course.

*Text and Reference Books*—Lectures, Emerson and Flint, Arnold, Chauveau, Percival, Clater, Steel, Dobson, Hill, Williams, Robertson, Finlay, Morton, Wood, Green, Flemming, Foster, Dalton.

As will be seen by consulting other parts of the catalogue, the practical exercise, or "work," in the Agricultural course,

consists of work upon the farm and in the various shops of the Mechanical Department, Drawing, Laboratory practice, and field work in Botany and Geology. These exercises are so combined and arranged as to both interest and instruct the student, while the tedium of physical labor is relieved from day to day by a variety of exercise.

In the Laboratories the student is taught Practical Chemistry, Botany, Zoology and Physics, while in his field excursions he is taught the principles of surveying both land and geologic, and the collection, classification and preservation of plants. On the farm he will be taught the art of practical farming, stock raising and dairy production, while in the shops he will learn those features of mechanism, and that familiarity with the use of tools and machinery so essential to every successful farmer.

A considerable time during the course will be devoted to practical Horticulture, the growing, pruning, grafting and budding of trees and vines, and in landscape gardening and decoration, under the direct supervision of the Professor of Agriculture.

#### CHEMISTRY.

The Chemical Laboratory consists of a commodious lecture room provided with water sinks, pneumatic troughs, tables for illustration and cases for chemicals and apparatus; an analytical laboratory with work tables, desks, shelves and drawers for thirty students, water and gas supply, vacuum pumps, hoods, distilling apparatus and storage case for chemicals and apparatus; and a balance room with excellent light, and containing a pair of Becker's best and most accurate chemical balances.

The course embraces inorganic, organic, analytical, agricultural and industrial chemistry, including the Chemistry of Light and Photography.

Instruction is given by means of text books, lectures, class illustrations and laboratory practice. The elementary princi-

ciples of chemistry and chemical philosophy are thoroughly taught, and the facts of chemistry impressed by copious experiments performed by the student. Blowpipe analysis, qualitative and quantitative analysis, assaying and metallurgy, are taken up in proper order. After completing a suitable course of laboratory practice, the further practical study of chemistry by the student will be determined by the object he may have in view. Agricultural chemistry is a prominent feature of the course.

*Sophomore Class*—General Chemistry, Inorganic and Organic; Laboratory practice, and preliminary analysis.

*Junior Class*—Qualitative Analysis, metals, acids, waters, poisons, soils; Quantitative Analysis, metals.

*Senior Class*—Quantitative Analysis, metals, soils, water, fertilizers, butter, cheese, farm products.

*Text and Reference Books*—Elliott and Storer, Appleton's Series, Clowe, Harcourt, Fresenius, Lupton, the Johnsons, Church, Wagner, Wurtz, Miller, Watt, Liebig.

#### MINERALOGY.

The Mineralogical Laboratory is provided with work tables, blow-pipes and lamps for twenty students, when all are provided with magnets, mortars, and other facilities for the determination of minerals. This Laboratory also contains combustion, crucible, muffle and roasting furnaces for both coal and gas, water supply, hoods, vacuum pumps, ore crusher, grinder, and samplers, and is provided with Buusen burners.

The study of Mineralogy includes the study of Crystallography with the occurrence, properties, forms and uses of the principal minerals. Determinative Mineralogy forms the most important part of the course, and is studied practically with the aid of lens, magnet, blow-pipe and simple analysis. Especial attention is given to the determination of the minerals and the assaying of the ores of the State.

The study of Determinative Mineralogy embraces the blow-pipe analysis of all the common and many rare minerals, the assaying of ores of gold, silver, lead, zinc, manganese, iron, coal, limestone and clay, and a course in mining.

*Junior Class*—Crystallography—practical determination of minerals with the blow-pipe, and simple analysis.

*Senior Year*—Assaying of ores of gold, silver, lead, zinc, manganese, iron, coal, limestone, clay; lectures on mining.

*Text and Reference Books*—Dana, Brush, Plattner, Ricketts, Mitchell, Crook and Rohrig, Phillips.

The Chemical and Mineralogical Laboratories have been greatly developed by the addition of a gas supply, vacuum pumps, assay, combustion and blast furnaces, water sinks and taps, platinum and porcelain goods, choice chemical reagents, and a cabinet of fine and rare minerals, comprising some valuable ores and native metals. During the past year several valuable minerals and native ores have also been added. A full set of photographic instruments and appliances are in use in the Chemical Laboratory for illustration in the study of the chemical properties of light.

Special attention will be given to Microscopic Photography and the preparation of lantern slides, and instruction in Practical Photography will be given privately, at the discretion of the Faculty, to those who may desire it.

### GENERAL SCIENCE COURSE.

This course is intended to offer thorough and extensive training in the principles of General Science, together with English, and French and German as electives.

Especial attention is paid to the Physical and Biological Sciences.

An Elementary course embracing Chemistry, Botany and Zoology is taken in the Sub-Freshman year and followed by a



continuation of these subjects with copious laboratory and practical work, together with a full course in Physics, throughout the collegiate years. It is believed that the advantages offered in Chemistry, Biology and allied sciences in this course, will be found scarcely inferior to those of similar courses in any of our higher institutions of learning. The well equipped Chemical, Mineralogical and Physical Laboratories of the University afford ample means of illustration as well as excellent opportunities for practical scientific work, and for original investigation.

Especial attention is paid in this course to practical astronomy. The University owns a fine new equatorial telescope, and other useful and valuable pieces of apparatus for illustration in this department as well as in that of Meteorology. Those who satisfactorily complete the course in General Science are entitled to the degree of B. S. (Bachelor of Science.) The afternoon labor exercises in this course are confined to the Laboratory, Shop, Field Surveying, and Drawing, but the student may substitute work on the farm for part of his shop work if he so desires. The course in General Science is open to all Beneficiaries, but if they choose to take additional work in French or German they must pay the regular tuition fee of ten dollars per year.

## DEPARTMENT OF MECHANIC ARTS AND ENGINEERING.

J. M. WHITHAM, PROFESSOR.

W. E. ANDERSON, ADJUNCT PROFESSOR.

J. W. MAYO, INSTRUCTOR IN METAL WORK.

..... INSTRUCTOR IN WOOD WORK.

L. C. GARDINER, INSTRUCTOR IN FORGE AND FOUNDRY.

LEE TREADWELL, INSTRUCTOR IN FIELD ENGINEERING.

Three courses of study are offered in this department, viz :

1. *Mechanic Arts Course.*
2. *Mechanical Engineering Course.*
3. *Civil Engineering Course.*

### I. COURSE IN MECHANIC ARTS.

The course of study, published elsewhere in this Catalogue, comprises the studies in the Mechanical Engineering course through the Sophomore year. It is intended to correspond to the course in Manual Training Schools, and, since it consists of 1517 hours actual work in the shops, a good English course, a good general course in Science, Mathematics through Trigonometry, and 786 hours practice in Drawing, it will compare favorably with the course in any school. The graduate is prepared for the practical duties of a machinist or draughtsman; by continuing two years longer he becomes a Mechanical Engineer.

*Table showing the distribution of time in hours in the Mechanic Arts Course.*

| SUBJECTS.                   | CLASS. |           |           |           | TOTAL<br>HOURS. |
|-----------------------------|--------|-----------|-----------|-----------|-----------------|
|                             | A.     | Sub-Fresh | Freshman. | Sophomore |                 |
| English, History, etc.....  | 390    | 247       | 130       | 86½       | 853½            |
| Science.....                |        | 143       | 130       | 86½       | 359½            |
| Pure Mathematics.....       | 130    | 130       | 130       | 130       | 520             |
| Applied Mathematics.....    |        |           | 130       | 216½      | 346½            |
| Shop Work.....              | 390    | 390       | 390       | 316½      | 1516½           |
| Free-Hand Drawing.....      | 195    | 195       |           |           | 390             |
| Mechanical Drawing.....     |        |           | 195       | 195       | 390             |
| Laboratory Work.....        |        |           |           | 43½       | 43½             |
| Total Theoretical Work..... | 520    | 520       | 520       | 520       | 2080            |
| Total Practical Work.....   | 585    | 585       | 585       | 585       | 2340            |
| TOTAL WORK.....             | 1105   | 1105      | 1105      | 1105      | 4420            |

## SUBJECTS TAUGHT IN THE SHOP.

First, carpentry and joinery; second, wood-turning; third, cabinet making and practical carpentry; fourth, pattern-making; fifth, foundry work; sixth, forging; seventh, metal fitting; eighth, machine tool work; ninth, care of steam engines and boilers. The time devoted to each branch is shown in the scheme below:

*Scheme Showing Course of Systematic Instruction in the Work Shops.*

| SECTION OF CLASS | SUB-DIVISION | FIRST TERM.  | SECOND TERM.   | THIRD TERM   |
|------------------|--------------|--|--|--|
| A                | A            | Fundamental principles of  | Practical cabinet making.  | Practical cabinet-making, one-thirds term.   |
|                  | B            | Carpentry and Joinery by systematic course of exercises  | Wood-turning lathe, two-thirds term.<br>Practical cabinet-making, one-third term | Wood-turning lathe, two-thirds term.   |
|                  | C            |  | Practical cabinet-making, two-thirds term.<br>Wood-turning lathe, one-third term | Practical cabinet making<br>Wood-turning lathe, one-third term.<br>Practical cabinet-making, two-thirds term.    |
| SUB-FRESHMAN.    | A            | Forging.....   | Forging, one-half term<br>Foundry work, one-half term.....                       | Foundry work.  |
|                  | B            | Foundry work .....   | Foundry work, one-half term<br>Forging, one-half term                            | Forging.   |
| FRESHMAN.        | A            | Metal fitting.....   | Metal fitting, one-half term<br>Pattern making, one-half term.....               | Manufacture of agricultural machines and practical carpentry, two-thirds term<br>Pattern making, one-third term. |
|                  | B            | Manufacture of agricultural machines and practical carpentry for two-thirds term.<br>Pattern making, one-third term..... | Pattern making, one-half term<br>Metal fitting, one-half term                    | Metal fitting.   |
| SOPHOMORE.       |              | Machine tool work—engine lathe, planer, drilling machine, milling machine, etc.  | Machine tool work—engine lathe, planer, drilling machine, milling machine, etc.  | Machine tool work—engine lathe, planer, drilling machine, milling machine, etc.                                  |

\* One student is in charge of tool room.

† One student from this class is with engine and boiler.

## SHOP EQUIPMENTS.

The shops of this department are to be put in the basement of the University building this summer, and will be ready for use by the first of September, with the following rooms and equipments:

## WOOD-WORKING ROOM.

This room is 40x60 feet, and will contain 17 work benches, supplied with Wilkinson's patent wood-worker's vises, two locked closets, and 17 complete sets of carpenter's tools, containing the following: 1 jack plane, 1 fore plane, 1 smoothing plane, 1 claw hammer, 1 mallet, 1 oil stone, 1 try square, 1 bevel square, 1 mortise gauge, 1 bradawl, 1 pair of dividers, 1 2-foot rule, 1 24-inch cross cut saw, 1 12-inch back saw, 1 screw driver, 1 dust brush, 6 firmer chisels, 1 1-2, 1, 7-8, 5-8, 3-8, 1-4 inch; 2 mortise chisels, 1-2, 3-4 inch; 4 gouges, 1, 3-4, 1-2, 3-8 inch; 1 brace and 8 bits, 5-8, 9-16, 1-2, 3-8, 5-16, 7-16, 1-4, 3-4 inch, for each two benches; 9 wood-turning lathes, 5 10-inch swing, 2 9-inch swing, 1 12-inch swing, 1 7-inch swing, with complete sets of turning tools containing 3 gouges 1, 1-2, 1-4 inch; 8 chisels, 1 1-4, 1, 5-8, 3-4, 1-2, 1-4 inch, half-round, 1 parting, 1 pair of calipers, 1 1-foot rule, 1 oil can, 1 oil stone, 1 dust brush, 1 double circular saw, 1 band saw, 1 scroll saw, 1 planing machine, 1 shaping machine, 1 steam glue pot; and there will be kept in the tool room for use in this room a complete set of augers, a complete set of clamps, 3 drawing-knives, a large assortment of bits, 2 rip saws, 1 hatchet, 1 ratchet brace, 3 spoke shaves, 1 spring plane, 3 shrink rules, and other tools.

## FINISHING ROOM.

This is a well lighted and close room 19x23 feet, and will contain 2 benches and all the tools and materials needed in finishing. This will also be used as a show room for articles manufactured in the shops.



## THE FORGING ROOM

is 22x29 feet, and will contain 7 power blast forges of most approved design, 7 anvils, 7 sets of smithing tools containing 1 hardy, 1 hand hammer, 6 pairs of tongs, flat 1-2, 3-8, 1-4 inch, bow 3-4 inch, round nose 9-16 inch, tool 1 1-8x1-2 inch, 4 benches with vises, and tools as follows: 1 square, 1 dust brush, 2 files, 10 "bastard" flat, 10 "bastard" 1-2 round, 1 cold chisel, 1 pair calipers, and 4 sets of tools (one for each two forges) consisting of 1 sledge, 1 flatter, 1 swage, 1 fuller, 1 eye punch, 1 cold chisel, 1 hot chisel, one complete set of heading tools from 1-8 to 3-4 inch, 1 set of size pins from 1-8 to 3-4 inch. A No. 3 Sturtevant blower will furnish the blast for the forges, and cupola.

## THE FOUNDRY

is a room 23x26 feet, and will be equipped with 7 moulder's benches with sand troughs, and sets of moulder's tools, consisting of 2 flasks, 1 bellows, 1 trowel, 2 slickers, 1 mallet, 1 swab, 1 pattern brush, 1 pair of rammers, 1 water pan, 1 sand pan, 1 riddle, 1 dust brush, 1 large sieve, 1 core oven, 1 brass furnace, 2 ladles, 2 skimmers, 1 wheel-barrow, 1 pair of platform scales (portable), a number of extra flasks, and other special tools. The cupola is outside of this room but is very convenient.

## METAL-WORKING ROOM.

This room is 20x80 feet, and will contain 10 work-benches with vises, two locked closets, and complete sets of fitter's tools, consisting of the following: 1 machinist's hammer, 1 cold chisel, 7-8 inch, 1 pipe chisel, 2 half-round chisels, 1-2, 1-4 inch, 1 center punch, 1 scratchawl, one pair of spring dividers, 4 inches, 1 pair of outside calipers, 4 inches, 1 steel rule, 4 inches, 1 hardened steel square, 4 1-2 inches, 10 files (assorted), 1 file card, 1 dust brush, 5 engine lathes, 2 12-inch swing, 3 14-inch swing, a complete set of tools for each lathe, 1 speed lathe 9-inch swing, 1 small planing machine, 20x10x9

inches, 1 large planing machine, 22x22x60 inches, a set of tools for each planing machine, 1 drill press, 1 universal milling machine (B & S), 1 Emery grinding machine, 1 grinding stone. There will be kept in the tool room for use in this department 1 set of taps and dies, 1 set of pipe dies, 1 set of pipe tongs, 2 pipe cutters, 1 set of twist drills, 1 set of reamers, 2 lathe chucks, 12 and 14 inches, 2 drill chucks, a large assortment of files, hammers of various sizes, large and small monkey wrenches, 1 centering square, several large and small squares, steel rules of different lengths, a collection of inside and outside calipers, a number of lathe dogs, 1 Victor micrometer caliper, cold chisels of various sizes and shapes, etc.

#### ENGINE AND BOILER ROOM.

This room is 20x30 feet and there will be in it a 25-horse power engine, which will supply power to the shops, and one of the large steel boilers which has been used for heating the building, and 1 Deane steam pump. There will be in the tool room for use in this room 1 steam engine indicator, a calorimeter, registering steam gauge and other instruments for making tests of engines and boilers.

#### TOOL ROOM.

There will be a room 12x14 feet, in which all tools for general use in the shops will be kept, and in connection with this the check system will be adopted; that is, each student in the shops will be assigned a number, (from 1 to the number of students in the shops), and he will have several brass checks with this number stamped on them, and each tool will have its place in the room. When a student wants a tool he will ask the man in charge of the tool room for it and at the same time hand him a check, the man in charge will hand the tool out and hang the check in the place of the tool. In this way the tools are registered without trouble.

#### A WASH ROOM

Will be provided with water, basins, towels, etc., and hooks for hats and coats will be put up.

A room 22 x 20 feet will be used as a store room for materials and general supplies.

#### CAPACITY OF THE SHOPS.

Fifty students can be accommodated in the shops at one time, divided among the rooms as follows:

|                             |    |
|-----------------------------|----|
| Wood-working room .....     | 20 |
| Metal-working room.....     | 14 |
| Forging room .....          | 7  |
| Foundry.....                | 7  |
| Tool room .....             | 1  |
| Engine and boiler room..... | 1  |

#### INSTRUCTION IN THE SHOPS.

##### ADJ. PROF. ANDERSON, SUPERINTENDENT.

Many people insist that the proper way to teach the mechanic arts is by manufacturing articles from the start, thereby requiring the application of principles never learned. The result of such training is, what we find every day, men who are said to be mechanics, and yet who can do only those things which they have done or seen done, because they do not understand the principles involved. The absurdity of this method of teaching will be obvious to any one. It is generally admitted that the proper way to teach arithmetic, for instance, is to teach the student the fundamental principles of addition, subtraction, etc., and, in order to fix these principles, practical problems are given at intervals; when the principles are acquired, he is able to apply them in all ordinary calculations. It is possible for him to solve a problem without understanding the principles, by memorizing the figures and their places, and, should he live long enough, he might memorize most of the ordinary calculations, and possibly be able to discover some of the principles involved. It is not hard to see the

advantages of the first over the second method, and there is no essential difference between the method which should be followed in teaching arithmetic and that required in teaching the mechanic arts. Hence the student will first pass through a course of graded exercises, which clearly set forth all the principles and fundamental operations. These exercises will be arranged with regard to their educational advantages alone. If useful articles can be made without detriment to the systematic instruction they will be, but, in general, only the principles will be taught until after the sophomore year. Students who have been through the four years' course ending with the sophomore class will manufacture articles for the market.

#### DETAILS OF INSTRUCTION IN WOOD-WORK ROOM.

Instruction in this room will embrace :

1. The names and uses of tools and their care.
2. Fundamental principles of carpentry and joinery.
3. Wood-turning.
4. Practical cabinet making and carpentry.
5. Pattern-making.

The student will be taught how to use the tools by performing typical operations with each one.

*The Fundamental principles of carpentry and joinery* will be taught in a regular, systematic course of exercises, beginning with the simplest and most easily constructed of all joints and progressing through the more difficult until all the underlying principles have been illustrated. One hundred and thirty hours will be devoted to these exercises.

*Wood-turning* will consist in, first, the care and use of the lathe and tools; then will follow progressive exercises ranging from the turning of a simple cylinder to the most complex and difficult chuck and eccentric work. Eighty-seven hours will be spent on the lathe.

## PRACTICAL CABINET-MAKING AND CARPENTRY.

The student will now apply the principles already learned by constructing articles to be put on the market; and will, also, be taught the use of the circular saw, band saw, planing machine, shaping machine, etc. He will also learn how to finish in oils, shellac, paints and varnishes. Furniture and other useful articles will be manufactured. Two hundred and thirty-eight hours will be devoted to this work.

## PATTERN MAKING.

It is supposed that the student is now familiar with wood-working tools and machines, and that he possesses a fair degree of skill in their use. The work of this course, though well calculated to give increased skill, will be arranged with reference to the principles of pattern construction. There will be no fixed course of exercises in pattern making but the patterns will be made as required for use in the foundry. The object is to afford such practice as will develop the details of the work, the manner in which the different pieces of wood should have the grain lie, where and what allowances are to be made for warping, shrinkage, finish, etc., and in what manner different patterns should be constructed to draw properly from the sand. One hundred and nine hours will be devoted to this work.

## DETAILS OF INSTRUCTION IN FORGING ROOM.

## LEWIS C. GARDINER, INSTRUCTOR.

The use and care of fires will be first taught. Then will follow instruction in

1. *Iron Forging.*
2. *Steel Forging.*

*Iron Forging* will be taught by a systematic, progressive course of exercises, which, when completed, will have thoroughly familiarized the student with all the operations of forging, such as drawing, upsetting, cutting, punching, bending, welding, etc.



To save time and expense when a difficult exercise is to be performed, the student will first perform it with a bar of lead, so that he may study the methods of holding and striking. It is evident that had he used iron instead of lead at first, several pieces might have been burnt before he succeeded in producing the desired form. The black-board will be freely used in this room, as in all others. Suppose, for instance, that the exercise is "to make two links of a chain." The instructor will make several sketches on the black-board, illustrating the various stages to be passed through in going from the "rough stock" to the finished links: or first, a sketch showing the size of the "stock;" then a sketch showing the bar when drawn down to the proper diameter and lengthened sufficiently to make the links; then a sketch showing the bar cut and the pieces bent in the forms of links; then a sketch showing the ends prepared for welding, and finally a sketch showing the finished link. After the principles have been acquired, the student will do the forging needed by the other departments of the shop. One hundred and fifty hours will be devoted to this work.

*Steel Forging.* Instruction will be given in the peculiar properties of steel, how to harden and temper it and how to weld. Especial attention will be given to tool dressing. Forty-seven hours will be devoted to this work.

## INSTRUCTION IN THE FOUNDRY.

LEWIS C. GARDINER, INSTRUCTOR.

Instruction will be given in molding, in green and dry sand and loam, and in casting iron and various alloys. The exercises will be progressive, advancing from the simplest to the most difficult and complicated work. Small castings, chiefly, will be made. Students will learn how to charge and attend the *cupola*, and each in turn will have charge of a melting. They will learn the different properties of the various mixtures of irons of different grades, which mixture is

the strongest, which the softest, and which will stand severe shocks, etc., as well as the properties of alloys which will be cast under fluid pressure. One hundred ninety-four hours will be devoted to this department.

## INSTRUCTION IN METAL-WORKING ROOM.

J. WALTER MAYO, INSTRUCTOR.

The instruction given will consist of:

1. *Metal Fitting.*
2. *Machine-Tool Work.*

*Metal-Fitting* will be taught by a graduated course of exercises. After acquiring a knowledge of the names, care and use of the tools, the students will have practice in chipping, filing, scraping, polishing, drilling, tapping, riveting, and piping. They will then be prepared to fit journal boxes, cut key-ways, manufacture hammers, wrenches and many other useful articles. One hundred and ninety-seven hours will be devoted to this work.

*Machine-tool work* consists in exercises at the engine and speed lathes, planing, milling, drilling and grinding machines. Each student will be taught the theory, capabilities and most advantageous manner of using each of the machines and the speed of rotation necessary for various kinds of work. Special attention will be given to the marking and laying out of work. After being familiar with the use of each machine, work will be done by the students on salable articles, such as steam engines, pumps, etc.

## INSTRUCTION IN CARE OF ENGINES AND BOILERS.

PROF. ANDERSON.

It is not intended to make a theoretical study of engines and boilers, since that properly belongs to the senior year of the mechanical engineering course; but, as many will not be permitted to pursue the mechanical course after the sophomore year, it is thought best to thoroughly familiarize them with the care and management of this important motor, and particularly the names and functions of the several parts. Hence one student will be detailed each day for instruction in the engine and boiler rooms, and special instruction will be given to the whole class during the third term, once each week. Engine and boiler tests will be made, and the use of the indicator fully explained.

## 2. COURSE IN MECHANICAL ENGINEERING.

This course has been revised and extended, and is believed to offer special inducements to the young men of the State. Mechanical engineering may be defined as being the application of mathematics to science, with particular reference to the *design and fabrication* of all forms of machinery. Since engineering is the combined science and art of utilizing the forces and materials of nature, and since this utilization is accomplished in nearly all cases by machines, or by processes working through machines, it is evident that *mechanical engineering is the basis of all art and industry.*

The course of study is published elsewhere in this Catalogue. It is based on the belief that a mechanical engineer should be a mathematician, a scientist, a draughtsman and a mechanic. The course extends over six years, and consists of *3120 hours devoted to theoretical, and 3510 hours to practical instruction.* The distribution of time among the several branches, both theoretical and practical, is shown in the following:

*Table showing the Distribution of Time in the B. M. E. Course.*

| SUBJECT.                      | CLASS |                |        |        |         |         | TOTAL<br>HOURS. |
|-------------------------------|-------|----------------|--------|--------|---------|---------|-----------------|
|                               | A     | Sub-<br>Fresh. | Fresh. | Sopho. | Junior. | Senior. |                 |
| English, History, etc. ....   | 390   | 247            | 130    | 86½    | .....   | .....   | 853½            |
| Science . . . . .             | ..... | 143            | 130    | 173½   | 130     | 86½     | 663             |
| Pure Mathematics . . . . .    | 130   | 130            | 130    | 130    | 130     | .....   | 650             |
| Applied Mathematics . . . . . | ..... | .....          | 130    | 130    | 260     | 433½    | 953½            |
| Shop Work . . . . .           | 390   | 390            | 390    | 216½   | 260     | 216½    | 1863½           |
| Drawing . . . . .             | 195   | 195            | 195    | 195    | 195     | 195     | 1170            |
| <hr/>                         |       |                |        |        |         |         |                 |
| Laboratory Work . . . . .     | ..... | .....          | .....  | 86½    | 130     | 173½    | 390             |
| <hr/>                         |       |                |        |        |         |         |                 |
| Theoretical Work . . . . .    | 520   | 520            | 520    | 250    | 520     | 520     | 3120            |
| <hr/>                         |       |                |        |        |         |         |                 |
| Practical Work . . . . .      | 585   | 585            | 585    | 585    | 585     | 585     | 3510            |
| <hr/>                         |       |                |        |        |         |         |                 |
| Total Work . . . . .          | 1105  | 1105           | 1105   | 1105   | 1105    | 1105    | 6630            |

In addition to the above, Students in Mechanical and Civil Engineering may take French and German as elective studies.

### 3. COURSE IN CIVIL ENGINEERING.

Civil engineering, as here understood, embraces the location and construction of railroads, canals, water works, sewage systems, foundations on land and in water, tunnels and superstructures; the surveys, improvements and defenses of coasts, harbors, rivers and lakes; the application of mechanics, descriptive geometry and graphics to the design and construction of arch bridges, roofs, trusses and suspension bridges; the design and fabrication of wind, hydraulic and electric motors, and air and heat engines; irrigation and drainage of lands; and the preparation of forms of specifications and contracts.

The course of study, published elsewhere in this Catalogue, has been revised and extended, and is believed to compare favorably with that in older institutions of technology. It is decidedly a *practical* course, and the graduate is well equipped for the duties of an engineer. He is, also, an excellent draughtsman and mechanic. The time in *hours* devoted to theoretical and practical instruction is shown in the following:

*Table showing the distribution of time in the B. C. E. Course.*

| SUBJECT                     | CLASS |            |        |        |         |         | TOTAL<br>Hours. |
|-----------------------------|-------|------------|--------|--------|---------|---------|-----------------|
|                             | A.    | Sub-Fresh. | Fresh. | Sopho. | Junior. | Senior. |                 |
| English, History, etc.....  | 890   | 247        | 130    | 86½    | .....   | .....   | 853½            |
| Science.....                | ..... | 143        | 130    | 173½   | 216½    | 86½     | 749½            |
| Pure Mathematics.....       | 130   | 190        | 130    | 130    | 130     | .....   | 650             |
| Applied Mathematics.....    | ..... | .....      | 130    | 130    | 173½    | 433½    | 866½            |
| Shop Work.....              | 390   | 390        | 390    | 173½   | 43½     | 86½     | 1473½           |
| Drawing.....                | 195   | 195        | 195    | 195    | 195     | 195     | 1170            |
| Surveying.....              | ..... | .....      | .....  | 130    | 216½    | 130     | 476½            |
| Laboratory Work.....        | ..... | .....      | .....  | 86½    | 130     | 173½    | 390             |
| Total Theoretical Work..... | 520   | 520        | 520    | 520    | 520     | 520     | 3120            |
| Total Practical Work.....   | 585   | 585        | 585    | 585    | 585     | 585     | 3510            |
| Total Work.....             | 1105  | 1105       | 1105   | 1105   | 1105    | 1105    | 6630            |

In addition to the above, students in Mechanical and Civil Engineering may take French and German as elective studies.

## PRACTICE IN SURVEYING IN THE FIELD.

### 1. *Exercises in Land Surveying* during the second term of Sophomore year.

a. *Chain*.—Kinds, tests, use; ranging lines; chaining over hills and valleys; chaining beyond obstacles; perpendiculars and parallels; offsets and angles.

b. *Compass*.—Parts, use, adjustments; finding declination of needle; use of vernier; retracing old lines; local attractions.

c. *Levelling*.—Parts, use, adjustments of level; measuring sensibility; use of rod; differential, profile and grade levelling.

d. *Transit*.—Parts, use, adjustments; azimuth angles and vernier; traversing; locating meridian by stellar and solar observations.

e. *Solar Transit*.—Parts, use, adjustment; latitude; longitude and time; ranging lines by solar attachment.

f. *Sextant*.—Parts, use, adjustments; measuring angles of altitude and azimuth; angular levelling.

g. *Use of barometer, clinometer and optical square.*

h. *Land surveying*.—Location of lost corners; subdivision of township; locating land from description in deed; division of land.

2. *Exercises in Surveying* during the third term of Sophomore year.

### A. *Topographical Surveying.*

a. *Plane table*.—Parts, use, adjustments; resection and orienting; locating boundaries; contouring.

b. *Stadia*.—Measuring local distance, distance between stadia hairs, distance from stadia hairs to object glass; graduating rod; angular levelling; use of stadia tables; profiling and contouring; keeping and plotting notes.

### B. *Hydrographic Surveying.*

a. Survey of parts of White River; locating bench marks; determining water slope; gauging and rating streams; sediment observations; erosion of banks; direction and force of current.

### C. *Mining Surveying.*

a. Survey of coal mine and cavern near Fayetteville. Location of claims.

### D. *City Surveying.*



a. Dividing up land into city lots; survey of parts of Fayetteville; locating lots from description.

3. *Road Engineering* continuing throughout the Junior year.

It consists of reconnaissance; preliminary survey; location; profiling; establishing grade; location of curves and turnouts; cross-section levelling; locating slope stakes; measuring embankments and cuts; estimates of volume and materials used in construction; inspection and measurement of bridges over White River, near Fayetteville; improvement of highways; location and estimates for tunnels.

4. *Sanitary Surveying* during the first term of Senior year.

a. Survey of Fayetteville, embracing estimates of material required and cost of construction of a complete sewage system.

5. *Geodetic Surveying* during the second term of Senior Year.

a. Location of base line; repeated measurements of base by various methods; location and establishment of signals; manufacture and location of station marks; measuring, distributing errors and correcting angles; tertiary triangulation of the neighborhood; geodetic and precise spirit levelling.

6. *Hydraulic Surveying* during third term, Senior year.

a. Location of water works for the City of Fayetteville, embracing complete details, estimates and cost.

#### PRACTICE IN DRAWING.

During the Sub-Freshman and A years instruction is given in Free-Hand Drawing as explained elsewhere in this Catalogue. All of the instruction in drawing to collegiate classes is given by the Department of Engineering and Mechanic Arts. The following course is for engineering students, and will be somewhat modified for students in other departments as shall be shown to be necessary.

*Freshman Year*—Instruction in use of instruments; practice in reading drawings; construction of geometrical figures; elements of mechanical drawing. Great prominence is given to the study of Descriptive Geometry.

*Sophomore Year*—Mechanical Drawing during the first term, and Topographical Drawing during the second and third terms.

*Junior Year*—Architectural Drawing; linear and isometrical projections.

*Senior Year*—Each student will make a design and general and detailed drawing of some structure, such as a bridge or steam engine.

The new draughting room will be equipped with tables, stools, planimeter, pantograph and blue print frame. Materials will be kept on hand and supplied to students at catalogue rates. Drawing instruments will be purchased at twenty per cent. discount.

## TEXT AND REFERENCE BOOKS.

*Surveying*.—Johnson, Gillespie, Haupt, Merrett.

*Road Engineering*.—Wellington, Searle, Gillmore, Gillespie.

*Sanitary Engineering*.—Latham, Adams, Philbrick.

*Hydraulic Engineering*.—Fanning, Nichol, Hennell.

*Civil Engineering*.—Rankine, Wheeler, Mahan.

*Mechanical Engineering*.—Rankine, Cotterell, Marks, Thurston, Goodeve, Unwin, Holmes, Perry, Shock.

*Machine Design*.—Rankine, Unwin, Anderson, Goodeve, Woods and Stahl.

*Mechanics*.—Rankine, Cotterell, Alexander and Thompson, Bowser, Todhunter, Smith.

*Bridges*.—Burr, Wood, Shreve, Greene, Waddell.

*Tunnels*.—Drinker, Burr.

*Mechanic Arts*.—Rose's Pattern Maker's Assistant<sup>e</sup> and Complete Practical Machinist, West's American Foundry Practice and Moulder's Text Book, Threadgold's Carpentry, Ede on Steel, Shelley's Workshop Appliances.

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ENGINEERING PERIODICALS.

The following weekly papers are taken for the benefit of engineering students, viz.:

*London Engineering.*

*Engineering News and Contract Journal.*

*Sanitary Engineer.*

*Carpentry and Building (Monthly).*

*Scientific American Supplement.*

*Scientific American.*

*American Machinist.*

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## ENGINEER'S CLUB.

During the session 1886-87 the engineering students met once a week and discussed professional topics. Duties were assigned and much time was required in preparation. Each student presented some topic in turn, and his lecture was usually one hour long. The following among other topics were discussed, viz.:

Hudson River Tunnel, Severn River Tunnel, Mersey River Tunnel, Plattsmouth River Bridge, Brooklyn Bridge, Charlottesville, Va., Water Supply, New York Water Supply, European Sewage Systems, etc., etc.

The Board of Trustees has permitted the engineering students to form a club, which is intended to take the place of these exercises.

## MATHEMATICS, LOGIC AND ASTRONOMY.

PROF. MURFEE.

## MATHEMATICS.

This subject should be taught both practically and logically, serving in scientific investigations and mental discipline. It is not enough to find "answers," but the deductions must be based on established principles. First, the pupil performs the work in imitation of the teacher or author; then comparing facts learned he reasons on the subject, consults the text and book of reference, makes the deduction, and applies the law to new cases. The power of original investigation and the faculty of invention are thus strengthened, and the student, by the inductive process of combining known principles and making new deductions, can anticipate the author in his demonstrations.

For admission into the Freshman Class, the applicant must pass satisfactory examination in Arithmetic and in Algebra to Quadratic Equations. It is desirable that he should have studied three books in Geometry, and that he should have been thoroughly drilled in Mental Arithmetic.

All students must supply themselves with drawing instruments; for much attention is paid to original investigations, in which at least the dividers and protractor are essential.

*Text-Books and Books of Reference—Algebra:* Robinson's University, Wentworth's Complete, Wells' University. *Geometry:* Wentworth, Loomis, Welch and Chauvenet. *Trigonometry:* Schuyler, Wells and Wentworth. *Analytical Geometry:* Loomis and Todhunter. *Calculus:* Loomis, Church and Byerly, Williamson.

## ASTRONOMY.

A term is devoted principally to Descriptive Astronomy together with as much Practical as possible in so short a period.

The subject is made interesting and profitable by the use of maps, globe, astral lantern, equatorial telescope, sextant and solar compass.

*Text and Reference Books:* Olmstead's College Astronomy, Bowen's Astronomy of Observation, Newcomb and Holden's Astronomy, Coffin's Navigation and Nautical Astronomy, the Nautical Almanac, Loomis' Astronomy; periodical, Siderial Messenger.

#### LOGIC.

Logic is taught, both from text-books and by lectures. Students are required to show its application in various scientific investigations. Essays from different authors are analyzed and discussed, with a view to the appreciation of sound reasoning and the detection of fallacies. Original discourses are required of students to impress the principles taught. In this way a subject, ordinarily regarded as dry, is made of the liveliest interest.

*Text Books and Books of Reference:* Jevon-Hill, McCosh, Mill and Hamilton.

### ENGLISH, HISTORY, FRENCH AND GERMAN.

PROFESSOR EDWARDS.

#### ENGLISH AND HISTORY.

The first three classes of the English course, the A class, the Sub-Freshman, and the Freshman, are devoted to the work of obtaining grammatical correctness, clearness, accuracy, ease and elegance of expression. Every effort is made to render the course rich in practical results. To this end each principle of English Grammar, Analysis, Historical Grammar, and Art and Science of Rhetoric, as it is learned, is turned to practical use in regular graded exercises. The History course extends through the Sophomore year, taking the place of English;

and here, too, regular exercises, being the discussion and answer of systematic historical questions requiring original investigation, will be a part of the year's work. The first term of the Junior year in English is devoted to detailed study of Shakspeare and Chaucer; the second and third terms are employed in the study of the History of English Literature, with readings from different authors as far as time allows. The exercises in this class consist of the investigation of original questions throughout English Literature. The Senior Class has two terms on Anglo-Saxon and one on general English Philology. This gives a firm, solid basis for all previous knowledge and all future investigation of English as a language.

#### TEXT BOOKS.

*Freshman Class.*—Morris's Historical English Grammar, Bain's Rhetoric, Abbott's "How to Write Clearly," Lectures on the Science of Rhetoric.

*Sophomore Class.*—Fisher's Outlines of Universal History. For reference, Rawlinson, Cox, Grote, Merivale, Gibbon, Mommsen, Lodge, Green.

*Junior Class.*—Macbeth (Rolfe's), Chaucer's Prologue and Knights' Tale, Welsh's English Literature; for reference, Ward's English Poets.

*Senior Class.*—Sweet's Anglo-Saxon Primer, Cook's Siever's Anglo-Saxon Grammar, Beowulf, Andreas, Handy Anglo-Saxon Dictionary, Earle's English Philology.

A course of reading as basis for exercises will be assigned each class to meet the exigencies of the case.

#### FRENCH AND GERMAN.

Two years (five hours per week) are devoted to each of these languages. Conversation forms an essential element of the courses. The language taught will be used as a medium of communication in the class, and every effort will be made to enable the student to speak it fluently and correctly. The



idea is to combine the "natural method" with the grammatical study necessary to a really useful knowledge of any language. French is put in the Freshman and Sophomore years, German in the Junior and Senior.

#### TEXT BOOKS.

*Freshman Class.*—Etude Progressive de la Langue Francaise, Worman's Grammaire Francaise, Saintsbury's Primer of French Literature, Voyage de Monsieur Perichon.

*Sophomore Class.*—Chardenal's Exercises and Idioms, with Grammar, Harrison's Syntax (for reference), Petite Histoire du Peuple Francais, Brachet's Historical Grammar, Selections from French Literature. These will be mostly of a scientific character, if the majority of the class consists of scientific students.

*Junior Class.*—Otis's Elementary German, Grimm's Maerchen, Conant's Primer of German Literature, Whitney's Reader and Grammar.

*Senior Class.*—Whitney's Grammar, Brandt's Grammar (for reference), Selections from German Literature, on scientific subjects, if the majority of the class consists of scientific students.

### GEOLOGY, BIOLOGY AND PHYSICS.

PROF. SIMONDS.

#### GEOLOGY.

This includes Lithological, Historical and Dynamical Geology. Prominence will be given to facts having an economic bearing. Especial attention will be paid to the formation of soils and deposits of valuable minerals in Arkansas. Field excursions form part of the regular course.

*Text and Reference Books:* LeConte, Dana, Geike, Lyell.

## BIOLOGY.

This includes Botany, Anatomy and Physiology, General Zoology and Entomology. Under *Botany* will be studied the structure, analysis and classification of plants—their geographical distribution and importance; favorable and unfavorable condition for life and growth; the use of the microscope as applied to the study of vegetable tissues, enemies, food, etc. In connection with the study of Botany, each student is required to collect, preserve, correctly classify and label, and deposit in the museum an herbarium of Arkansas plants.

*Anatomy and Physiology* will embrace the study of human anatomy, physiology and hygiene, including such subjects as digestion and foods, poisons and antidotes, respiration and ventilation, exercise and clothing. Under *Zoology* will be studied the classification and distribution of the forms of animal life upon the globe. Comparative Anatomy and Physiology, as preparatory to the study of stock-breeding, will receive especial attention. In connection with the study of Zoology, instruction in practical Taxidermy, Insect and Skeleton mounting is given.

*Entomology* will be studied with special reference to its economic relations with Agriculture and Horticulture. In the biographical sciences, instruction will be given by text-book and lectures, but all students will be required to perform simple dissections and work with the microscope; prepare, mount and preserve specimens properly classified and labeled. The University is equipped with microscopes, specimens and models.

*Freshman Class.*—Anatomy, Physiology and Hygiene, Systematic and Comparative Zoology, Insect and Skeleton Mounting, Taxidermy, Systematic Botany, classification of plants.

*Sophomore Class.*—Structural and Microscopic Botany,—Entomology. Study of insects injurious to vegetation; remedies, etc.

*Junior Class.*—Geology, Botany and Scientific Horticulture. Diseases of plants, cross fertilization, variation.

*Senior Class.*—Zoology, Comparative Anatomy, Histology, Vertebrate Dissection, Embryology, stock breeding.

During the past two years there have been added an herbarium of more than 2,500 plants, quite a number of stuffed and mounted birds, bird skins, insectivora, reptilia and fossils. Contributions to this department are solicited.

*Text and Reference Books.*—Gray, Bessey, Chapman, Martin, Huxley, Dalton, Carpenter, Flint, Darwin, Packard, Harris, Draper.

## PHYSICS.

This course embraces recitations upon text-books, lectures, class illustrations and experiments in the Physical Laboratory. The general course extends throughout the Freshman year, and consists of the study of the branches known as heat, light, sound, electricity and magnetism, and mechanical powers.

Heat is studied during one term of the Sophomore year as being essential to the engineering and scientific courses, while in the Senior year electrical engineering is taught.

*Text and Reference Books:* Worthington's Physical Laboratory Practice, Meyer's Experiments in Light and Sound, Pickering's Physical Measurements, Olmstead's Natural Philosophy, Tyndall on Light, Sound and Heat, Larden's Heat, Stewart's Heat, Sylvanus Thompson's Electricity, Day's Electric Light Arithmetic, Day's Exercises in Electrical Measurements, Murdock's Notes on Electricity and Magnetism, Kempe's Hand Book of Electrical Testing, Ganot's Physics.

## PSYCHOLOGY, ETHICS AND POLITICAL ECONOMY.

PRESIDENT.....

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### PSYCHOLOGY AND ETHICS.

These important studies are taught inductively, no theory or doctrine being urged for acceptance which is not based upon a philosophical induction from the facts of consciousness. The student is taught to subject every statement of fact or principle to the test of his own experience. The fullest and freest discussion of opposing views is encouraged.

### POLITICAL ECONOMY.

The aim is to give a succinct statement of the undisputed principles of political economy, and to discuss conflicting views with all possible fairness.

### TEXT AND REFERENCE BOOKS.

*Psychology*—Bascom, Mahan, Porter, Sir William Hamilton.

*Ethics*—Alexander, Daggs, Bascom, Porter, Calderwood.

*Political Economy*—Chapin, Mill, Say, Perry.

## ANCIENT LANGUAGES.

PRESIDENT.....

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### PROF. WILLIS.

The subjects taught in this department are the Latin Language and Literature and the History of Rome, the Greek Language and Literature and the History of Greece. Authors are read in the order of their difficulty, and neat written translations are required at stated intervals. The grammar and idioms of these languages are carefully studied and compared with those of English and other languages.

Marked attention is paid to the rendering of English into Latin and Greek. In the lower classes the best manuals for Latin and Greek composition are used; for the higher classes carefully graded exercises are prepared by the professor.

Due prominence is given to the study of the Latin and Greek metres. The grammars are made the basis of this instruction, but fuller explanation is given in lectures.

For admission into the Freshman Class, students should be able to read at sight and parse any passage in two books of Caesar; must know thoroughly all the declensions and conjugations, regular and irregular, of the Latin Grammar and the elementary principles of Syntax; and should be able to translate easy sentences from English into Latin.

No Greek is required, at present, for admission.

#### LATIN.

*Freshman Class*—Gildersleeve's Grammar, Jones's Latin Prose Composition, Caesar (Greenough or Kelsey) 2 Books, or Nepos (C. & S.) 35 pages, Virgil (Greenough) 3 Books of Aeneid and Selections from Eclogues, Pennell's or Smith's *Smaller History of Rome*.

*Sophomore Class*—Gildersleeve's Grammar, Jones's Prose Composition, Cicero's Orations (Harkness) 50 pages, Odes of Horace (MacLeane), Livy (Lincoln) 50 pages.

*Junior Class*—Harkness' Grammar, Prose Composition, Livy 60 pages, Satires and Epistles of Horace (1500 lines) Tacitus (100 pages).

*Senior Class*—Harkness' Grammar, Original Exercises, Cicero's Moral Works, Terence, Javenal (Leverett or MacLeane), *Roman Literature*.

*Books of Reference*.—Harper's Latin-English Lexicon, White's English-Latin Lexicon, Classical Dictionary, Classical Atlas, Zumpt's, Madvig's and Roby's Latin Grammars.

Other authors may occasionally be substituted for those above when a change seems beneficial: (e. g.) Sallust, Ovid, Catullus, Tibullus, Propertius, Pliny, Plautus.

## GREEK.

*Freshman Class.*—Goodwin's Grammar, Whiton's Lessons, Xenophon's Anabasis (Goodwin) 6 Chapters.

*Sophomore Class.*—Goodwin's Grammar, Jones's Prose Composition, Xenophon's Anabasis 3 books, Lysias 3 Orations, History of Greece.

*Junior Class.*—Goodwin's Grammar, Jones's Prose Composition, Herodotus (Mather) 40 pages, Homer's Iliad (Pratt and Leaf) 3 Books, Demosthenes 40 Pages, Plato.

*Senior Class.*—Goodwin's Grammar, Original Exercises, Thucydides 1 Book, Euripides 1 Play, Sophocles 2 Plays, Greek Literature.

*Books of Reference.*—Liddell and Scott's Greek-English Lexicon (7th Oxford Edition), Yonge's English-Greek Lexicon, Classical Dictionary, Classical Atlas, Goodwin's Moods and Tenses, Hadley's or Curtius's Grammar.

## NORMAL COURSE.

## PROFESSOR HOWELL.

The design of this course is to train teachers for the schools of the State. The instruction is so co-ordinated to both the Preparatory and College Departments as to make its benefits accrue to all grades of teachers, from the primary teacher to the college professor. Considerable class practice and observation work are given throughout the course. The aims are:

1. To lead pupils to think and investigate for themselves.
2. To train them in the best methods of imparting instruction without destroying their individuality.
3. To teach them how to organize, grade and discipline the various kinds of schools.



4. To give them a knowledge of school law, and especially of the duties of teachers as officers of the State.
5. To impart to them a valuable summary of the history of education.
6. To teach them the fundamental principles of Psychology and of the science of human conduct.

*Text and Reference Books:* Baldwin's and Kellogg's School Management, Parker's Talks on Teaching, Hewett's Pedagogy, The Practical Teacher, Volume VIII, Swett's Methods, Thring's and Page's Theory and Practice of Teaching, Rosenkranz' Philosophy of Education, DeGraff's School-Room Guide, Bain's Education as a Science, Wickersham's School Economy and Methods, Painter's History of Education.

## PREPARATORY STUDIES.

Students are not admitted into the lowest Preparatory class until they are thoroughly familiar with the fundamental operations of Arithmetic, viz.: Addition, Subtraction, Multiplication and Division. In Reading, they must be able to understand and intelligently render specimens of the grade of the Fourth Reader: must have a knowledge of Primary English Grammar, Primary Geography, the rudiments of Penmanship, and the spelling of ordinary words of the grade of the Fourth Reader.

Much importance is attached to Mental Arithmetic as a means for developing the power of Analysis and for strengthening the mind. Both oral and written exercises are required daily.

**Daily exercises in Penmanship are required.**

In the A Class, Geography is taught during the first term and United States History during the second and third terms. Latin is begun by those who propose a Classical Course or the complete Normal Course.

Classical students are thoroughly drilled in the elements of Latin Grammar and are carried through a Reader and two books of Cæsar, or the equivalent, by the close of the Sub-Freshman year. Students are exercised by frequent translations from English into Latin.

Algebra and Geometry are begun in the Sub-Freshman year. In the former students are thoroughly drilled in the elementary principles and required to master everything to equations of the second degree. In the latter three books are studied during the year.

Free-Hand Drawing forms a part of the regular curriculum and is begun in the A class. Drawing has a disciplinary, as well as a practical value, and also tends to refine the taste and polish the mind.

Elementary Science is taught throughout the Sub-Freshman year. The experience of the past two sessions in giving instruction in this line of study has been most satisfactory. The classes have been taught by the Professor of Chemistry and Biology, who has sought to give such an outline of scientific facts and principles as would prove valuable both to those students who propose to take a fuller course, and to the larger number who drop out of school before reaching the Collegiate Department.

*Text Books.*—Barnes' New National and Swinton's Readers, Ray's Practical Arithmetic, Thompson's Mental Arithmetic, Barnes' Higher Arithmetic, Mitchell's New Intermediate Geography, Barnes' United States History, Greene's Grammars and Analysis, Chittenden's Composition, Robinson's Algebra, (Wentworth's for reference) Wentworth's Geometry, Gildersleeve's Latin Grammar, Jones's First Lessons in Latin, Gildersleeve's Latin Reader.

## MUSIC DEPARTMENT.

MISS KING.

### PIANO FORTE.

This course will require six years for completion. Should the pupil possess marked talent and unceasing energy, it may be finished in less time.

#### FIRST YEAR.

Studies of the first principles of music, five-finger exercises, movement, scales, and such studies as will prepare the pupil for light classic composition of the Old Masters.

#### SECOND YEAR.

Practical exercises of Duvernoy, Czerny and Bach; introduction of such new movements of Liszt and Chopin as will prepare the pupil for work exclusively classic.

#### THIRD AND FOURTH YEARS.

Studies of Clementi, Heller and Bach, with especial attention to touch; introduction of more advanced movements of Liszt, that the pupil may be enabled to contend successfully with the moderately difficult classic composition.

#### FIFTH AND SIXTH YEARS.

Advanced studies of Beethoven, Clementi and Cramer, and difficult compositions of Schumann, Liszt, Chopin, Hayden, etc.

## VOCAL CULTURE.

#### FIRST YEAR

Will be devoted exclusively to forming of register and to producing evenness and natural tones of voice in register. Bassini's Art of Vocalization will be the theory used.

## SECOND AND THIRD YEARS.

Pronunciation, timbre, science and art of breathing (diaphragm and clavicular), and art of phrasing; studies of Conconi and Bassini, with light selections from the Operas.

## FOURTH AND FIFTH YEARS.

Colature, Messa di Voco, Portamento, and other vocal embellishments; students of Garcia, Conconi, Rossini, etc., with the more difficult selections from the operas and classic composition of Mendelssohn and others.

## SIXTH YEAR

Will embrace the first course in Opera Dramatic.

## VIOLIN.

## FIRST YEAR.

Practice of bowing, finger exercises, Manzas' Instructor.

## SECOND YEAR.

Etudes of Dancsa and arrangements from the operas.

## THIRD YEAR.

Kaiser's Etudes, Sonatas by Hayden, Schubert, etc.

## FOURTH YEAR.

Krautzer's Etudes and compositions by De Beriot, Kreutzer, etc.

## TERMS.

## ONE LESSON PER WEEK.

|                                |        |           |
|--------------------------------|--------|-----------|
| Piano forte.....               | \$6 00 | per term. |
| Voice Culture..                | 6 50   | "         |
| Violin or Guitar.....          | 6 00   | "         |
| Thorough Bass and Harmony..... | 5 50   | "         |

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|                                       |      |   |
|---------------------------------------|------|---|
| Theory and Composition .....          | 7 50 | " |
| Use of Piano one hour every day ..... | 2 35 | " |

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For two lessons per week the rates are double the above, except for the use of piano.

One-half of tuition must be paid in advance, balance at end of term.

No deductions will be made on account of absence from recitations except in cases of prolonged sickness; then the loss will be shared equally between student and teacher.

By a resolution of the Board of Trustees, at its recent meeting, the students of the Music and Art Departments, who have not matriculated in other departments, will hereafter be required to matriculate and pay the usual fees, and to be subject to the regulations applicable to other students.

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## ART DEPARTMENT.

The Young Ladies' Industrial Art Studies embrace drawing, designing, modeling, working in wood, metal, clay and other substances. They teach the art of producing an infinite variety of objects, both useful and ornamental; in short, *what ever lies at the foundation of the industries dependent alone upon human invention, skill and handiwork.*

There has been excellent progress during the past two sessions in drawing, designing, embroidery, brass-work, and wood-work; and the young ladies begin to appreciate the importance of training the eye and hand in working material things for pleasure and profit.

Fine Art Studies will constitute hereafter an optional course to be paid for at the teacher's rates. These studies will embrace charcoal outlining and crayoning, painting in oil and water colors, and other forms of decorative art.

## MILITARY DEPARTMENT.

The military officers of the University consist of the President, Commandant and such assistant professors as may be assigned to duty in this department by the President. The President is head of the department, and issues from time to time such general and special orders as he deems necessary to the efficiency of the military exercises and to the enforcement of order in the buildings and on the grounds.

This department is designed to impart to each male student not physically incapacitated to bear arms, theoretical and practical instruction in the school of the soldier, of the company, and of the battalion, and thereby furnish the State with a body of young men qualified to organize its militia.

Besides, the military drill is a superior health-giving exercise, and promotes physical development, manly carriage, neatness, precision, order, and a habit of obedience, which is a valuable aid in the enforcement of discipline.

The entire body of male students is divided into companies, which are officered by cadets, selected for proficiency in drill, good deportment and scholarship. The cadet officers are regarded as assistants in the enforcement of discipline, and their orders, while on duty, are considered as duly authorized, and must be obeyed accordingly.

Cadet officers are expected and required to be examples in Military deportment and general good conduct.

A neat uniform, with brass buttons and suitable trimmings, is required to be worn by all males.

Parents and guardians will save money by postponing the purchase of winter suits for their children and wards until they arrive at Fayetteville.

At the competitive drills during Commencement Week, "B" Company won the honor of carrying the Battalion Colors during the session of 1887-88, and the Cadet Officers, of the Battalion presented a gold medal to Cadet Wallace Oliver for being the best drilled private.



## OFFICERS OF THE BATTALION.

J. M. WHITHAM, *Colonel.*

GEO. C. SCHOFF,  
*1st Lieutenant and Adj.*

W. N. CROZIER,  
*1st Lieutenant and Q. M.*

H. J. HALL,  
*1st Lieutenant.*

G. A. HUMPHREYS,  
*Sergeant-Major.*

"A" COMPANY.

G. A. WARREN, *Captain.*

M. DANAHER, *1st Lieutenant.*

P. BOWLES, *2nd Lieutenant.*

D. C. B. AIKIN, *1st Sergeant.*

A. G. TAFF, *2nd Sergeant.*

W. T. GUNTER, T. V. BRUCE AND A. WEBB, *Corporals.*

"B" COMPANY.

J. H. HOBES, *Captain.*

LEE TREADWELL, *1st Lieutenant.*

N. F. DRAKE, *2nd Lieutenant.*

J. C. MCNEELY, *1st Sergeant.*

L. F. FISHBACK, *2nd Sergeant.*

A. S. BROWN, W. L. BLANKS, P. J. PARK, *Corporals.*

COLOR GUARD.

L. F. TAFF, *1st Sergeant*; H. E. WILLIAMS, J. N. WHEELER,  
J. R. GANAWAY, *Corporals.*

BAND.

R. L. RUTHERFORD, *Drum-Major*; W. W. POWELL, *Leader*;  
W. E. DICKSON, Wm. BATES, F. O. ROBERTSON, M. L. HULSE, C.  
E. FAULKNER, A. W. SHREVE, R. D. HARRIS, T. C. GREENE, R. L.  
WADE, E. L. PARKER, *Members.*

Prof. Whitham will remain Colonel of the Battalion until relieved by an officer to be detailed from the United States Army as Commandant of Cadets.

## DISTINCTIONS

CONFERRED AT COMMENCEMENT, JUNE 9, 1887.

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Upon the recommendation of the Faculty, the Board of Trustees conferred the following degree :

*Licentiate of Instruction*—Hubert J. Hall and J. H. Taff.

The following students were awarded diplomas in the business course :

S. A. Horton, H. V. Cassaday, J. L. Turner, Storer Leverett, F. W. Greene, E. F. Saxon, Lula M. Wines, Elmer L. Parker, W. O. Bray, C. F. Bush, Annie Duke.

A gold medal offered by the Faculty for the best debater of the Junior Class was awarded to Lee Treadwell.

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By invitation of the Faculty, Rev. H. R. Withers, D. D., Hot Springs, delivered the Baccalaureate sermon on Sunday, June 5, and Hon. G. W. Caruth, Little Rock, the annual address on Thursday, June 9.

## GENERAL INFORMATION.

### LOCATION.

The Arkansas Industrial University is located within the corporate limits of the town of Fayetteville, Washington county. The location is thought to be unsurpassed by any other locality in the State in salubrity of climate, beauty of surrounding scenery, fertility of soil, variety and perfection of agricultural and horticultural productions, and in the morality and intelligence of its people.

### PROPERTY.

The property of the University consists of the proceeds of the munificent grant of land by Congress, the bonds of Washington County, and of the town of Fayetteville, the appropriations made by the State, and the University farm and lands—amounting in all to \$300,000 in value.

The Main Building is one of the most magnificent structures of the kind in the South. A cut of it and a brief description can be seen on the second page of this catalogue.

The New Dormitory, which is to be constructed according to excellent plans and specifications recently approved by the Board of Trustees, will probably be completed by the close of the first term.

### ACCESSIBILITY.

Students may reach Fayetteville from both the north and the south by daily trains on the Arkansas branch of the St. Louis & San Francisco Railroad, which now connects on the south with the Little Rock & Fort Smith Railroad at Van Buren.

Students, on arriving at Fayetteville, must report at once to the President of the University. No student will be allowed

to recite in any class until properly enrolled, but will be held responsible for his conduct from the time of his arrival in Fayetteville.

#### WITHDRAWAL OF STUDENTS.

Parents, or guardians, who wish to withdraw their children or wards from the University, should write to the President of the Faculty, stating their wishes. Unworthy students sometimes deceive the Faculty by pretending that their parents desire them to return home. No honorable discharge will be given to a student under age, who is unable to produce the written application of his parent or guardian for his withdrawal, or if his number of demerits shall exceed the proportion of two hundred allowed during the session. Nor will an honorable discharge be given to a student, under censure of any kind, whether for neglect of duty, or other cause, even though he may have the consent of his parent or guardian for his withdrawal from the University.

#### BOARDING HOUSES.

Students are required to board at such places as are approved by the Faculty, and are under the supervision of the President of the University. No change of boarding house will be allowed, except at the end of each term, unless under extraordinary circumstances, nor without the permission of the President.

If at any time the influence of a boarding house be found pernicious, boarders will be removed at the instance of the Faculty.

#### EXPENSES.

Board, including fuel, lights and washing, may be had with families living in or around Fayetteville at from \$12 to \$16 per calender month. Day boarding is sometimes obtained at from \$8 to \$10 per month.

In order to lighten the expenses of students of limited means, the Board of Trustees, two years ago, authorized the Faculty to open a boarding house on the College grounds, where

good substantial fare might be furnished to from forty to fifty boys at cost. To effect this purpose, the old Refectory was thoroughly repaired, and the dining-room and kitchen furnished at the expense of the University. At the request of the Faculty, one of the professors took charge of the establishment at the opening of the first session, and another at the beginning of the second session. Under their supervision it was so conducted that good substantial table board was furnished the students for less than \$8 per month. This arrangement will be continued, or some other cheap plan substituted, until the completion of the new dormitory.

Students who board on the grounds are expected to provide their own furniture, fuel and lights. Before entering the boarding house they are required to promise to conform to such regulations as to study, the preservation of order, visiting, leaving their quarters, and the care of their rooms, as may be prescribed by proper authority.

Tuition charges for students who have not Beneficiary appointments, have been reduced to \$10 per session of forty weeks.

All new students, on entering, are required to pay a matriculation fee of \$5.

No student will be enrolled until all fees are paid, and no tuition fees will be refunded, except in cases of sickness causing continuous absence of not less than six weeks.

#### POCKET MONEY.

The Faculty would advise parents to allow their sons but little pocket money. It has been well said in regard to students, that "a pocket full of money and a head full of sense are seldom found together." Money can be sent monthly for the payment of boarding and other necessary expenses. Postal orders can always be cashed at the Post Office at Fayetteville. The President of the Faculty cannot personally take charge of the personal affairs of students.

## LITERARY SOCIETIES.

In the Collegiate Department there are two Literary Societies, the "Mathetian" and "Philomathean." Students who are members of the Sub-Freshman Class, are also eligible to membership in these.

Literary Societies may be organized in the Preparatory Department under proper restrictions. At present there is but one in operation, the Garland Society.

## LIBRARY AND READING ROOM.

The University Library, containing nearly 3000 volumes comprises many valuable works, and additions are constantly being made. Nearly all the newspapers of the State of Arkansas, and several from other States have been generously furnished to the Library, either by the publishers or other friends of the University. The best magazines of America and some from England, France and Germany are also purchased. All these are kept on file in the Library, and students have access to them, as well as the books, at certain hours each day. No Library fee is charged, but a deposit of \$2 is required to insure proper care of the books taken from the Library.

## APPARATUS AND MUSEUM.

The University is supplied with no inconsiderable amount of apparatus for illustrating the different sciences, and for the prosecution of original work. Most of the departments are well equipped for practical laboratory and field work.

Valuable additions have been made in the last year to the chemical and physical departments. Appropriations are made by the Board of Trustees, annually, for the purchase of needed supplies.

## CABINET AND MUSEUM.

The cabinet of minerals consists chiefly of a collection of State minerals, contributed by various parties of the State, and by the professors; but it has been recently enlarged by purchase, and embraces also specimens of value from other States.



It is hoped that the day is not far distant when, by exchange and purchase, the institution will secure an ample supply of specimens for the illustration of the minerals and fossils of our own and other countries.

There has been constructed an herbarium case large enough to hold the indigenous plants of North America and such exotics as are of economic value. It will be the work of years to complete a collection of the plants of North America, but the work is progressing. A valuable addition has been made by the purchase of Prof. Harvey's collection of the plants of Arkansas, embracing more than 2500 specimens.

There are about 500 species of animal specimens for illustrating the various parts of zoology.

Collections in all the departments are slowly accumulating.

Contributions of minerals, fossils, Indian relics and rare curiosities are solicited.

#### APPOINTMENT OF BENEFICIARIES.

All appointments should be completed, if possible, before the opening of the autumn term. The County Judges, who make the appointments, should prepare duplicate notifications of appointments, one of which should be forwarded to the President of the University, and one to the Secretary of the Board of Trustees; and in case the appointee fails to appear at the University within twenty days after an appointment (except in case of sickness) he or she will be regarded as having declined the appointment, in which case it will be the duty of the President of the Faculty to notify the person making the appointment of such failure, and he, in turn, should make another appointment as soon thereafter as possible; such other appointee being required to appear at the University as soon as possible after appointment. The President of the Faculty shall continue to notify appointing officers until their respective number of appointees make their appearance at the University.

All beneficiary students should be present at the opening of the autumn term; and unnecessary delay, either of old students returning, or new ones reporting, will lead to the forfeiture of their appointments.

#### QUALIFICATIONS.

The attention of County Judges is called to the fact that *no Beneficiary Students will be admitted, unless they have the following qualifications:*

Students are not admitted until they have become familiar with the fundamental principles of arithmetic, viz.: addition, subtraction, multiplication and division. In reading, they must be able to understand and intelligently render specimens of the grade of the Fourth Reader, must have a knowledge of primary English grammar, primary geography, the rudiments of penmanship, and the spelling of ordinary words of the grade of the Fourth Reader. These qualifications are the test of admission at the beginning of the session; those applying later will be admitted only on the grade of the class.

#### APPOINTMENTS.

As much trouble and annoyance is caused by students who have been appointed as Beneficiaries, coming without any evidence of appointment, the following are adopted as the proper forms of notice to be given by the Judge of County Court to the President of the University and the Secretary of the Board of Trustees, upon the appointment of Beneficiary Students by the County Court, or the Judge thereof, in accordance with the sixth section of an Act, approved March 6, 1875.

##### [Form 1.—Appointment.]

No. .... [To be given to the Student.]

*To whom it may concern :*

I hereby appoint, ..... of .....  
County, State of Arkansas, as a beneficiary, to the Arkansas Industrial University.

Given under my hand, this, ..... of ..... 188....

Send a notice like the following to the President of the University, and one to the Secretary of the Board of Trustees at Fayetteville.

[Form 2.—Notice to President of the University.]

.....Arkansas. }  
 To the ..... University:

I hereby notify you that I have this day appointed .....  
 ..... of ..... County, State of Arkansas, a  
 Beneficiary to the Arkansas Industrial University.

Given under my hand, this ..... day of .....  
 188 ...

.....  
 BENEFICIARIES.

The Board of Trustees have provided that the number of Beneficiaries shall be limited to one thousand to be distributed to the counties of the State in proportion to population of 1880, and that in every case, where a county fails to supply its quota of Beneficiaries the Governor shall be authorized to appoint such Beneficiaries to the full number authorized by law, provided that such appointment may be vacated on an application from the county so failing to fill its quota, but may be resupplied from some other county whose quota has not been filled. [See table].

| COUNTIES.       | Beneficiaries | COUNTIES.         | Beneficiaries |
|-----------------|---------------|-------------------|---------------|
| Arkansas.....   | 10            | Lee.....          | 16            |
| Ashley.....     | 13            | Lincoln.....      | 12            |
| Baxter.....     | 7             | Little River..... | 6             |
| Benton.....     | 24            | Logan.....        | 19            |
| Boone.....      | 15            | Lonoke.....       | 15            |
| Bradley.....    | 8             | Madison.....      | 15            |
| Calhoun.....    | 7             | Marion.....       | 10            |
| Carroll.....    | 16            | Miller.....       | 12            |
| Chicot.....     | 12            | Mississippi.....  | 9             |
| Clay.....       | 13            | Monroe.....       | 12            |
| Clark.....      | 15            | Montgomery.....   | 7             |
| Cleburne.....   | 8             | Nevada.....       | 17            |
| Cleveland.....  | 10            | Newton.....       | 6             |
| Columbia.....   | 19            | Ouachita.....     | 15            |
| Conway.....     | 16            | Perry.....        | 3             |
| Craighead.....  | 8             | Phillips.....     | 26            |
| Crawford.....   | 11            | Pike.....         | 8             |
| Crittenden..... | 11            |                   |               |
| Cross.....      |               |                   |               |
| Dallas.....     |               |                   |               |
| De Kalb.....    | 11            |                   |               |
| Drew.....       |               |                   |               |
| Franklin.....   | 11            |                   |               |
| Fulton.....     | 11            |                   |               |
| Gentry.....     | 8             |                   |               |
| Greene.....     | 11            |                   |               |
| Harrison.....   |               |                   |               |
| Hempden.....    |               |                   |               |
| Holmes.....     |               |                   |               |
| Howard.....     |               |                   |               |
| Jefferson.....  | 16            |                   |               |
| Jones.....      | 11            |                   |               |
| Lafayette.....  |               |                   |               |
| Lawrence.....   |               |                   |               |

There is also one "Honorary Scholarship" to each county, to be selected for merit and proficiency from the Public Schools of each county, according to Section 2, of Act July 23, 1868.

#### SALE OF ARDENT SPIRITS NEAR THE ARKANSAS INDUSTRIAL UNIVERSITY.

By an Act of the General Assembly of the State of Arkansas, approved March 9, 1875, it is unlawful for any person to sell or give any vinous or ardent spirits within three miles of the Arkansas Industrial University, unless it be prescribed by a regular practicing physician for medical purposes.

Application for catalogue or blanks for Beneficiary Appointments should be addressed to Col. J. L. Cravens, Secretary, Fayetteville, Ark.

**CALENDAR--1887-'88.**

The Fall Term begins Monday, September 5, 1887.

The Fall Term ends Friday, December 2, 1887.

Spring Term begins Monday, March 5, 1888.

**Spring Term ends Monday, June 4, 1888.**

Summer Term begins Monday, June 4, 1888.

Summer Term ends Monday, September 3, 1888.

[ At this time the present Senior Class will be graduated.]

The Fall Term begins Monday, September 3, 1888.

The Fall Term ends Thursday, December 6, 1888.

From the above it may be seen that hereafter the vacation will be in the winter. This arrangement affords students from malarious districts an excellent opportunity to spend the summer at school in the mountains, and enjoy the winter vacation at home without endangering their health.

## ALUMNI OF THE ARKANSAS INDUSTRIAL UNIVERSITY.

### CLASS OF 1875.

Botefuhr, Laura D. (Mrs. Schulte, Fort Smith, Ark., Student of music in Cincinnati, Ohio.).....Fayetteville, Ark  
 Carson, Ann E.....Jonesboro', Ark  
 Carson, Augusta O. (Mrs. Thomas Cline.).....Jonesboro', Ark  
 Davis, Lizzie P. (Teacher, Los Angeles, Cal.).....Bentonville, Ark  
 McCart, Eva (Kansas).....Fayetteville, Ark  
 McKinney, Chas. F. (Commercial Traveler).....Ozark, Ark  
 Moore, Lucy J. (Mrs. Ross, Cincinnati, Ark.).....Fayetteville, Ark  
 Putman, Anna (Teacher in Public School).....Fayetteville, Ark

### 1876.

Barnett, Nettie (Mrs. C. Boles).....Fayetteville, Ark  
 Neal, Wm. H. ....Van Buren, Ark  
 Taylor, E. L. (Teacher).....Van Buren, Ark  
 Gorton, Bell L. (Teacher).....Aurora, Ill  
 Gregg, Alfred W. (deceased).....Fayetteville, Ark  
 Harris, Agnes Mrs. Johnson, of Kansas City.....Fayetteville, Ark  
 Harris, Sallie E. Mrs. C. P. Conrad, for several years Professor in A. I. U. Kansas City  
 Johnson, Albert P. Lawyer, Winfield, Kansas.....Wesley, Madison County, Ark  
 Naggener, W. J. ....Farmington, Washington County, Ark

### 1877.

Borden, Alice.....Fayetteville, Ark  
 Hawkins, J. T. ....Mount Holly, Union County, Ark  
 Jennings, Edgar.....Fayetteville, Ark  
 Massie, Collin, (Teacher and Minister).....Charleston, Ark  
 Walker, J. V. (Prosecuting Attorney).....Fayetteville, Ark  
 Watson, Charles A. Lawyer and Minister.....Washington County, Ark  
 Carden, E. B. ....Bloomer, Sebastian County, Ark  
 Mellette, W. M. (Lawyer).....Fort Smith, Ark  
 Simms, W. D. ....Bentonville, Ark

### 1878.

Blakely, Nora. (Mrs. H. M. Higgins, Hot Springs).....Fayetteville, Ark  
 Gregg, Andrew S., (Physician).....Fayetteville, Ark



Petigrew, Thos. A. (Lawyer).....Charleston, Franklin County, Ark  
 Reed, Maggie, (Mrs. P. A. Crawford).....Fayetteville, Ark  
 Sutton, Wm. S. (Supt. High School, Houston, Texas).....Fayetteville, Ark

## 1879.

Butler, H. M., (Poet and Teacher).....Varner Station, Lincoln County, Ark  
 Floyd, J. C., (Lawyer, Yellville, Ark,).....Bentonville, Ark  
 Harrod, J. H., (Lawyer, Conway, Ark,).....Lonoke, Ark  
 Marris, S. F., (Editor Democrat,) .....Viney Grove, Washington County, Ark  
 Marshall, J. C., (Member Legislature,).....Avoca, Benton County, Ark  
 Patton, Alice, (Teacher in California,).....Viney Grove, Washington County, Ark  
 League, C. V., (Lawyer, Hot Springs, Ark., County Judge of Garland County, Ark.) .....Toledo, Dorsey County, Ark  
 W. J. C. D., (Judge Circuit Court, Monticello, Ark,) Hamburg, Ashley County, Ark

## 1880.

Kitchens, T. B.....Jonesboro, Craighead County, Ark  
 Langford, W. H. (Merchant, Pine Bluff).....El Dorado, Union County, Ark  
 Russell, Lawrence (Lawyer, Russellville, Ark.) .....Russellville, Pope County, Ark  
 Droke, G. W. (Teacher, A. I. U.).....Bentonville, Ark  
 Ross, F. C., (Lawyer and Real Estate Agent, Fort Worth, Tex.) .....Fort Smith, Ark  
 Johnson, T. M.....Wesley, Madison County, Ark  
 Illman, J. A., County Clerk, Washington County, Ark. ....Fayetteville, Ark  
 Williams, Naomi J. (Teacher).....Washington County, Ark  
 King, Artelee Alice.....Fort Smith, Ark  
 Patton, Mattie J. (Student C. L. S. C. Siloam Springs),  
 .....Viney Grove, Washington County, Ark

## 1881.

Carnall, Ella (Teacher).... Fort Smith, Ark  
 Ellis, F. W. (U. S. Signal Service, Washington, D. C.).....Fayetteville, Ark  
 Moore, J. I. (Lawyer, Helena, Ark).....Vineyard, Phillips County, Ark  
 Reed, Lina (Artist) .....Fayetteville, Ark  
 Reiff, O. S. (Lawyer, Fort Smith).....Magazine, Logan Co., Ark  
 Watson, J. J. (in Australia).....Fayetteville, Ark

## 1882.

Brown, W. D. (Physician).....Newtonia, Mo  
 Booth, W. P.....Bateville, Ark  
 Carrigan, A. H. (Lawyer).....Washington, Hempstead, Co., Ark  
 Chanslor, C. K. (Civil Engineer in Oregon).....Washburne, Barry Co., Mo  
 Cherry, W. R. (Lawyer in Texas).....Patterson's Bluff, Franklin Co., Ark  
 Gregg, L. W. (Lawyer).....Fayetteville, Ark  
 Hon, Daniel (Deceased).....Waldron, Scott Co., Ark  
 Jones, Gustave (Teacher, Marysville, Mo.).....Jacksonport, Ark

- Lanier, J. A. M., (Teacher, Mountain Home, Ark.—married)  
 ..... Mountain Home, Baxter Co., Ark  
 McDonough, J. B. (Lawyer, Fort Smith—Representative in Legislature)  
 ..... Bloomer, Sebastian Co., Ark  
 McFarlane, R. W. (Lawyer and Editor, Greenwood) Enterprise, Sebastian Co., Ark  
 Oates, T. F..... Russellville, Pope Connty, Ark  
 Pickel, J. W. (Lawyer) ..... Mulberry, Franklin County, Ark  
 Rogers, P. A..... Spavinaw, Benton County, Ark  
 Shell, G. C. (Lawyer, Lake Village, Chicot County) Augusta, Woodruff County, Ark

## 1883.

- Bates, C. O..... Cincinnati, Washington County, Ark  
 (Teacher and Student of Law, University of Michigan.)  
 Cravens, Jessie (Teacher and Artist)..... Fayetteville, Ark  
 England, W. W. (Teacher) ..... Evansville, Washington County, Ark  
 Greaves, C. D. (Lawyer) ..... Hot Springs, Ark  
 Mayes, J. F. (Tie Man)..... Fayetteville, Ark  
 Stroup, Henry (Editor)..... Webb City, Franklin County, Ark  
 Taliaferro, Lou (Teacher) ..... Bentonville, Ark

## 1884.

- Anderson, L. S. (Lawyer, Washington, D. C.) ... Herndon, Craighead County, Ark  
 Duncan, W. H. (Lawyer) ..... Conway, Faulkner County, Ark  
 Edmiston, W. L. (Teacher Public Schools, Ft. Smith, Ark.)..... Springfield, Mo  
 Gates, D. A. (Lawyer and Editor)..... Tillar Station, Drew Co., Ark  
 Goodwin, W. P..... El Dorado, Union Co., Ark  
 Hillis, E. W..... Jonesboro', Craighead Co., Ark  
 Hudson, J. H..... Dardanelle, Yell Co., Ark  
 Lake, Ella (Teacher of Music, Boonsboro) ... Viney Grove, Washington Co., Ark  
 Reed, G. M. W., Jr. (Lawyer)..... Fayetteville, Ark  
 Taff, J. L. (Teacher, Austin, Tex.) ..... Waldron, Scott Co., Ark

## 1885.

- Hart, J. C. (Lawyer, Dardanelle)..... Dardanelle, Yell Co., Ark  
 Howell, J. W. (Clerk, House of Representatives)..... Clarksville, Ark  
 Kinsworthy, E. B. (Teacher)..... Black Colony, Sevier Co., Ark  
 Notrebe, E. P. (Physician in Mississippi)..... Sarassa, Lincoln Co., Ark  
 Woodall, W. H. (Teacher)..... El Paso, White Co., Ark  
 Woolverton, C. D. (Teacher)..... Center Ridge, Conway Co., Ark

## 1886.

- Bates, J. H. (Teacher, Lawyer, Tex.)..... Cincinnati, Washington Co., Ark  
 Leverett, Mary (Teacher, Oxford, Miss.) ..... Fayetteville, Ark  
 Middleton, Mai (Teacher, Fort Smith)..... Fayetteville, Ark  
 Mulholland, Sarah (Book-Keeper)..... Fayetteville, Ark  
 Tillar, B. J. (Law Student, Little Rock)..... Tillar Station, Drew Co., Ark

It has been impossible to obtain information as to the present address and occupation of some of the alumni, and there are probably many errors in what is stated above. It is therefore requested that all alumni or other persons who can correct or add to the above, will write at once to the Secretary of the Faculty, giving the desired information.





## MEDICAL DEPARTMENT.

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The Trustees of the Arkansas Industrial University, in the Spring of 1879, deemed it expedient to establish a *Medical Department*, to be located at Little Rock, the capital of the State. The organization was accordingly at once perfected, a full corps of professors secured, and the First Annual Announcement of a course of Medical lectures, to commence Oct. 7, 1879, was issued to the public.

Since this date, an annual course of medical lectures, beginning early in October, and continuing five months, has been given at the Medical College building, situated on Second, between Main and Louisiana streets, Little Rock.

The medical gentlemen comprising its Faculty, are all men of acknowledged ability and standing in their profession, and have been untiring in their efforts to advance the interests of this department.

The growth of this branch has been gradual and natural, the session of 1879 and 1880 having twenty-two matriculates, and one graduate, who had previously attended a course of lectures at another institution, while the Eighth Annual Session (1886 and 1887) had 61 matriculates and 15 graduates.

The College building is a very imposing three-story structure, composed of stone and brick, and very conveniently located. It contains two general lecture halls, and a very large, well-ventilated dissecting-room, well provided with all the improved conveniences for obtaining a thorough and complete practical knowledge of the anatomy of the human body.

The College is also well provided with the necessary charts, models, apparatus, etc., for illustrating each particular subject

practically to the eye as well as to the ear of the student. The supply of dissecting material is ample and at a mere nominal cost—the State having made liberal provision in this particular.

The *Clinical* instruction in this Institution is very extensive, embracing almost every disease known to prevail, and every class of accident liable to occur. These are always practical and afford superior advantages to students and practitioners to obtain an ocular demonstration of diseases, accidents and their treatment.

The *Ninth Annual* Session will commence on Wednesday, October 5, 1887, and continue five months.

For special Catalogue or other information apply to

R. G. JENNINGS, M. D.,  
Secretary of Faculty, Little Rock, Ark.



## BRANCH NORMAL SCHOOL

### AT PINE BLUFF.

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This Branch of the Arkansas Industrial University was established by the General Assembly for the purpose of securing an adequate supply of properly trained teachers for the Public Colored Schools of the State. Its terms, course of study, sessions, etc., correspond with those of the former Normal Department of Fayetteville, and each County Judge is entitled to appoint as many colored beneficiaries to the Institution at Pine Bluff as his county is allowed under the apportionment to send white ones to Fayetteville; consequently the two classes of appointments do not interfere with each other. The expenses of a student at Pine Bluff, for board and washing, need not exceed \$12 per month, and a number of those who have heretofore attended have managed to reduce their expenses very materially by labor.

For further information address the Principal,

PROF. J. C. CORBIN,

PINE BLUFF, ARK.

